

Monthly

A Reference for Buyers

HITCHCOCK'S
**MACHINE
TOOL
BLUE BOOK**

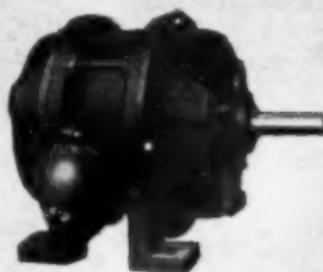
25,000

Controlled Circulation

Published By

508 So. DEARBORN ST.

CHICAGO



You get these advantages with Reliance Ball- and Roller-Bearing Motors

Elimination of oil with greater cleanliness and fewer repairs.

Less inspection and lower lubricant cost.

Uniform air gaps constantly maintained.

Easier starting and better efficiency.

Our new Bulletin No. 4000 gives all the details.

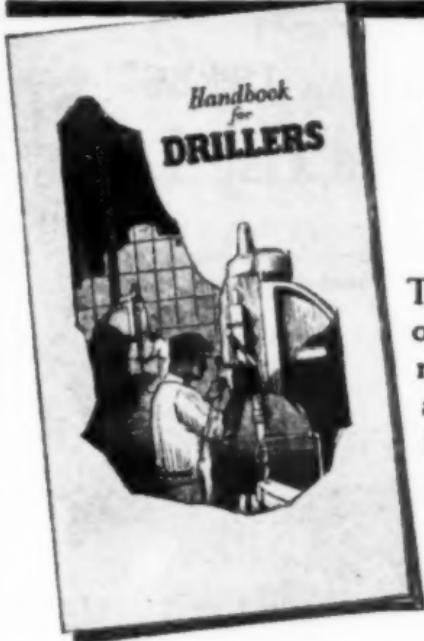
Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches:

Boston	New York	Philadelphia	Pittsburgh
Cincinnati	Detroit	Chicago	Birmingham, Ala.

*We specialize in motors, sizes 1/2 to 250 h. p. constant and adjustable speed
D. C.; squirrel cage and slip ring A. C.*

RELIANCE AC DC **MOTORS**



The A-B-C of Good Drilling Practice!

Thousands of copies of this booklet are mailed out annually all over the world, to men and boys interested in knowing the "why" as well as the "how" of twist drills and drilling.

May we send you a copy? It costs you nothing but a postcard and puts you under no obligation.

Just ask for the "Handbook for Drillers."

The **CLEVELAND**  **TWIST DRILL
COMPANY
CLEVELAND**
TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES

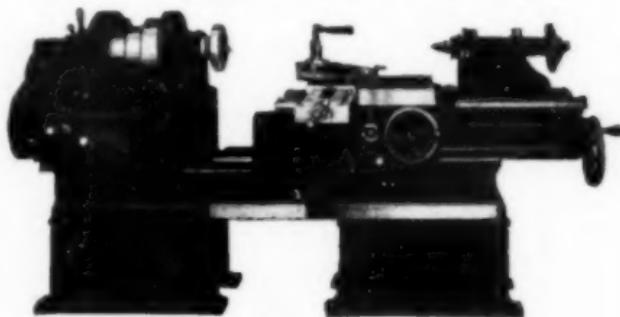
Manufacturers, also, of

Carbon and High Speed Drills for every purpose; "Mezzo" Super-Carbon Drills; Hand, Jobbers' and Shell Reamers; "Peerless" High Speed Reamers; "Paradox" Adjustable Reamers; "Quick-Set" Reamers; Chucking Reamers for Turret Lathes; Counterbores; Countersinks; Sockets; End Mills; and the "Ezy-Out" Screw Extractors.

CLE-FORGE
TRADE MARK REG. U. S. PAT. OFF.

Rahn-Larmon 18"/36" Extension Bed Gap Lathe

A lathe of so wide a range that it reduces to a minimum the amount of equipment required, as well as operating time, in jobbing shops, railroad shops, or wherever there is a large variety of work to be done.



The Lathe with the Wide Range

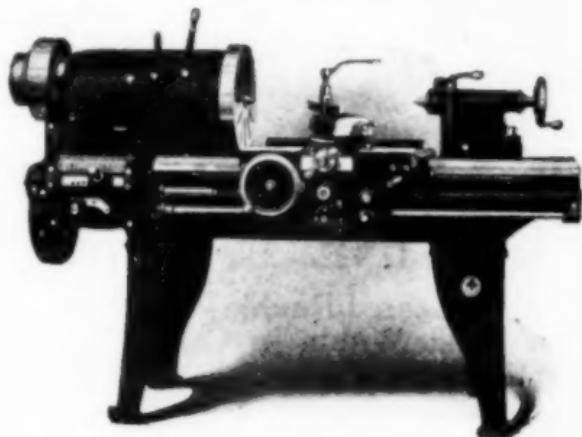
There is hardly a reasonable limit to the work that can be done on this modern Extension Gap Lathe. It enables the operator at all times to have a lathe ready for any job, without tearing down and setting up.

And not only is it versatile, but it is a real lathe on every job. It is so sturdily constructed that it absorbs the vibrations of the heaviest cuts. And as for convenience—that's its strong point. Arranged for belt or a. c. or d. c. motor drive. Also made in 22"/40" and 28"/50" sizes.

Get in touch with us. Find out what this lathe will do for you and how it saves costs. Glad to go into the matter with you fully, without obligating you in any way.

The Rahn-Larmon Company
Cincinnati, Ohio

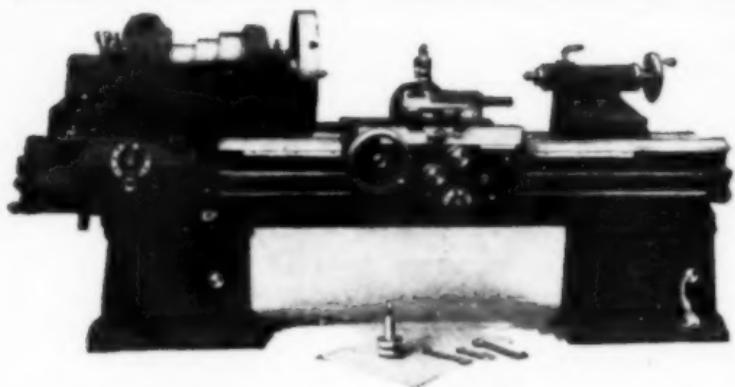
LeBlond Heavy Duty LATHES



They embody the very latest developments and refinements in engine lathe design. While essentially heavy duty machines they embody operating convenience with accuracy that adapt them to the most exacting tool room requirements. They are built in a complete line of sizes, 13" to 36" swings with either cone driven or geared headstock, and are offered with the usual attachments.

Write for our literature

**THE R. K. LeBLOND MACHINE
TOOL COMPANY**
CINCINNATI, OHIO



20" Instantaneous Change Gear ENGINE LATHE

Double Back Geared Double Plate Apron. Any Pitch Or Feed Within Its Capacity Instantly Obtainable Without Removal Of A Gear.

Tailstock of the cutaway type, which permits swivelling of compound rest parallel with the shears.

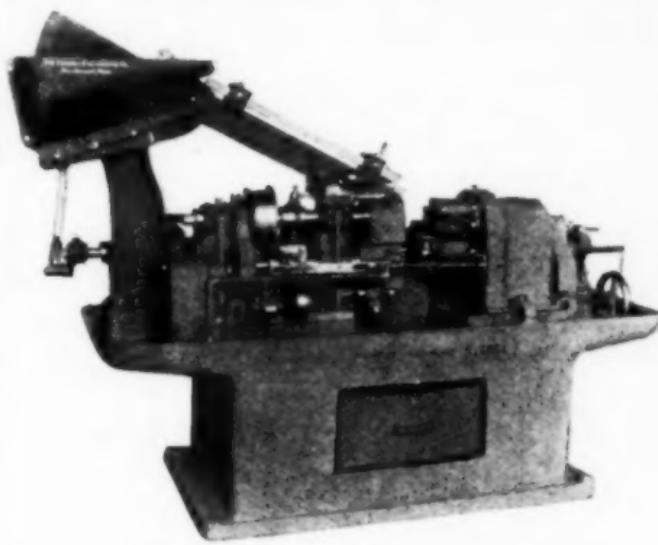
Double Plate Apron with the mechanism so arranged that longitudinal and cross feeds cannot be engaged when screw-cutting.

Gear Box entirely enclosed, with steel gears throughout.

Send for full particulars—sizes 18" to 36"

THE

Boye & Emmes Machine Tool Co.
2245 Spring Grove Ave.
CINCINNATI, OHIO



"This is Production"

**2800 Pointed and Threaded
1/2" Bolts Per Hour—
One Operator!**

WHEN USING

**Four Economy Automatic Combined
Pointing and Threading Machines.**

**Capacity 1/4" x 1" to 3/4" x 5 1/2"
Bolt and Cap Screws.**

**The Economy Engineering Company
WILLOUGHBY, OHIO**

Drill and Price—*both right*

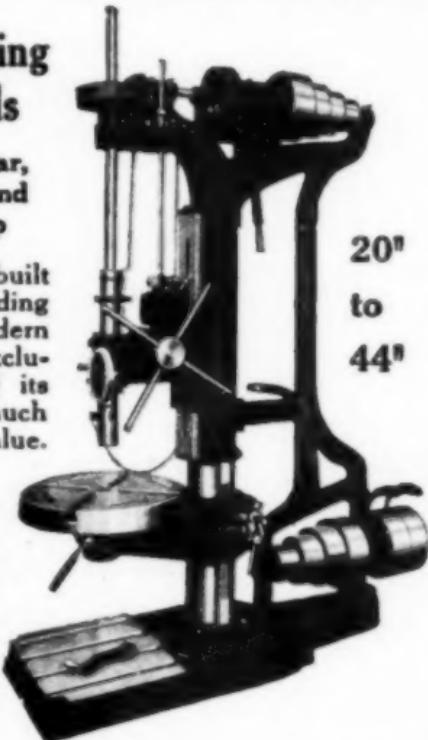
The "Aurora" Means Maximum Output

Aurora Sliding Head Drills

With Back Gear,
Geared Feed and
Automatic Stop

The "Aurora" is built throughout according to the best modern practice, with exclusive features of its own which add much to its practical value.

The ratio of gearing insures unusual power at the drill point. The foolproof table prevents a careless workman from spoiling the work.



20"
to
44"

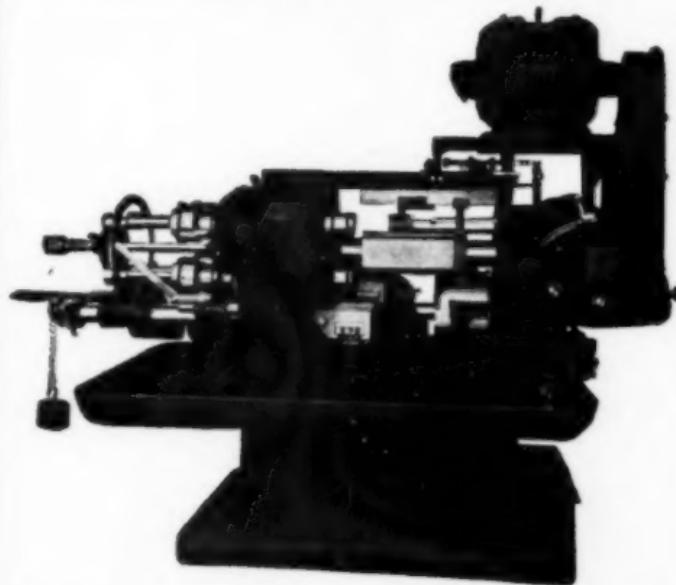
Other features are enclosed positive gears, automatic release worm wheel and patented tapping attachment. Made in sizes 20, 21, 22, 24, 26, 28, 32, 36, 40 and 44-inch. Belt or motor drive.

*Yes, it is right in both quality and price.
May we send description and bid on your needs?*

The Aurora Tool Works

DIVISION THE OESTERLEIN MACHINE CO.
3303 Colerain Ave., Cincinnati, Ohio

It Pays to Know What the Gridley Can Do



Many are the concerns, using parts from bar stock, that have saved thousands of dollars a year through investing a few thousands in Model G Gridley Multiple Spindle Automatic Screw Machines.

We are not asking you to buy. We want you only to find out definitely what the Gridley can do for you. Send B/P or Samples of your bar stock parts for definite production figures—no obligation whatsoever.

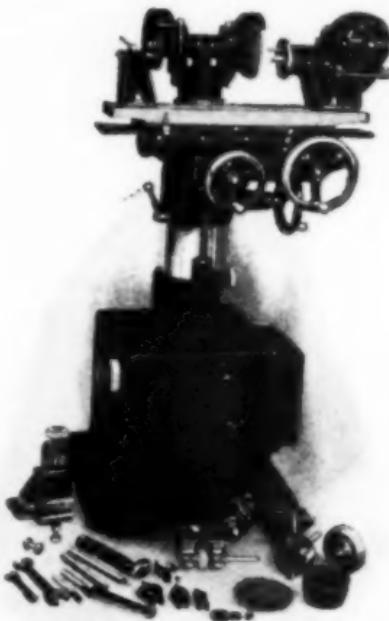
Write Dept. C. S.

The National Acme Co.
Cleveland, Ohio

New York

Detroit

Chicago



Motor Driven No. 1 Universal Tool Grinder

Grand Rapids Universal Cutter and Tool Grinder

With Self-Contained Motor Drive,
Eliminating All Overhead Work.

An ideal machine for the shop using cutters and reamers, for whom our larger machines would be an extravagance.

Any work within the capacity of the machine can be handled with maximum convenience.

BULLETIN ON REQUEST

Gallmeyer & Livingston Company
342 Straight Ave., S. W.,
GRAND RAPIDS, MICHIGAN, U. S. A.

Cutter and Tool Grinders

For All Classes of Work

No. 12
Cutter and Tool
Grinder



The Nos. 10, 11 and 12 give a range of sizes that will take care of any kind of cutter and tool work as well as light cylindrical grinding.

Let us recommend the proper sizes for your work

LANDIS TOOL COMPANY
Waynesboro, Pa.

New York Office: 30 Church Street Detroit Office: 5928 Second Blvd.
Chicago Office: 618 W. Washington Blvd.

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

Made in three
sizes of single
and multiple
spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

La Salle Grinders

American Style C T A
For Dry Grinding Only



Unexcelled as a dry grinder for twist drills. Extra large drill holder has capacity from 1" to 3½".

American Style W T A is arranged for both wet and dry grinding.

All American Grinders are now equipped to handle taper shank drills.



No. 1 Plain and Surface Grinder

(Micrometer Adjustment)

Grinding wheels.....	8" x 1"
Between wheels.....	15"
Height to spindle center.....	40"
Table surface.....	8" x 14"

Has vertical travel of 12" on guides, $\frac{3}{4}$ " by micrometer, and may be raised to within 2" of spindle center. Wheel grinds to center of a surface 9" wide.

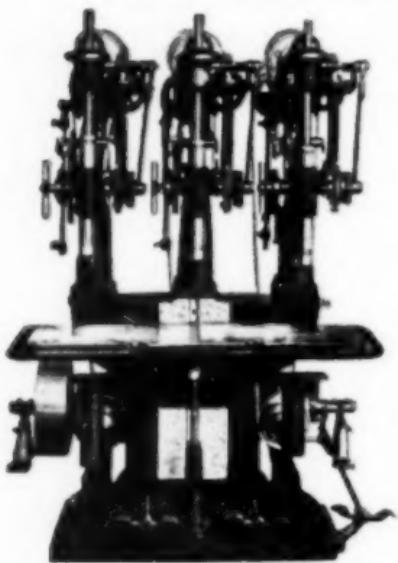
Let us know your grinding requirements

LaSalle Tool Company

LaSalle, Illinois, U. S. A.

Superior Conveniences —

Always Means Greater Economy



Rockford
Automatic
Gang
Drilling
Machine
has such
Conveniences

Built with 2, 3, 4 and 6 Spindles—Box Column Type

Superior Equipment pays because it either increases the output, or improves the quality of the work, or both. The Rockford has accomplished both in many shops, and very likely can do so in yours. We invite you to write us about your drilling requirements.

Automatic Return—When each spindle has completed its operation it automatically returns to its highest position, where it remains until the starting lever is tripped, when it immediately drops to position above the work.

By Removal of the stop pin in the cam, the spindle will immediately return to lowest position above work, and when tripped by automatic stop, will return to highest position and immediately drop again to work, repeating the movement automatically until the power is shut off. The spindle can be pulled ahead of the feed while in operation, a great advantage in drilling through a cored piece, piping or similar work.

A postal brings the Circular. Let's hear from you.

Rockford Drilling Machine Co.

Rockford, Illinois



Drills to the center of a 10" circle.
Capacity, $\frac{3}{8}$ " diameter.
Up and down run of spindle, $2\frac{1}{2}$ ".
Up and down run of table, 7".

Another Original Canedy-Otto Feature

That of first offering an electric bench drill completely equipped and ready for the job, the improved design eliminating the use of all gears and placing the cone pulley in exact alignment, enabling the belt to be run at its maximum speed.

It also eliminates all twists and turns of the belt, meaning both a saving of belts and time, giving a greater speed of spindle, a feature of great advantage when using drill for small diameter.

Regular equipment consists of vertical type ball-bearing motor, toggle type switch, extension cord, socket, belting and chuck.

Canedy-Otto Manufacturing Company
Main Offices and Factory—Chicago Heights, Illinois

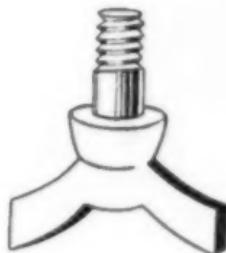
New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.

Threading 1200 pieces per Hour

These brass wing
screws shown are
being threaded on
our



Standard High Speed Tapping Machine

*Let us show you what can
be done on your work*

Leland-Gifford Co.

Worcester, Mass.,

U. S. A.



BOSTON
NEW YORK

Branch Offices:
CLEVELAND
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CHICAGO
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DO YOU KNOW
THE
Avey-matic

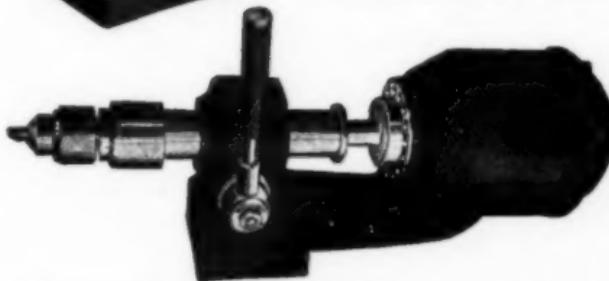
can be operated

FULL AUTOMATIC
SEMI AUTOMATIC
or HAND FEED?

In the full automatic all movements of the spindle are continuous, operator only changing the work.

In the semi-automatic, the feed trips, returns the spindle but the feed is re-engaged by hand.

The feed can always be disengaged at any point of the stroke or advanced ahead of the feed by means of the hand lever.



Three Sizes of Motor Drilling Units

CAPACITIES $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ " in C. I.

Can be attached to tables of regular AVEY machines for side hole drilling while regular operation is being performed. - - - Can be mounted in any position.

GET OUR CATALOG OF LATEST DRILLING PRACTICE

THE AVEY DRILLING MACHINE CO., - CINCINNATI

Monarch Jr. Lathes



11" x 3"
Quick Change
Oil Pan
\$317.

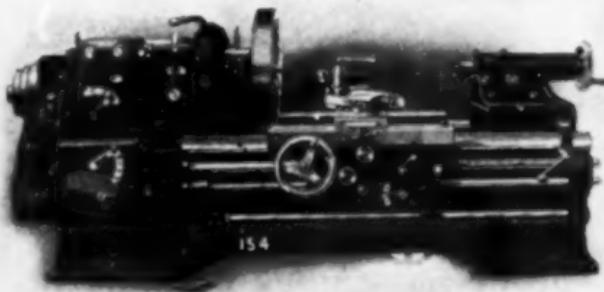
are the smallest members of the Monarch lathe family. Yet they are the "biggest little lathes" built.

The Monarch line of lathes includes all sizes and types from the little 9-inch Junior lathe to the big, massive 30-in. lathe. In this line there is a lathe to fill your requirements at the price you want to pay.

Send for Catalog

The Monarch Machine Tool Co.
206 Oak Street, Sidney, Ohio

CINCINNATI LATHES



154

are supplied with either standard or special tools and fixtures to handle your jobs most economically. If you desire to avoid repair bills and obtain longest satisfactory service, our catalog and prices will interest you. Furnished in sizes 16" to 30" inclusive, Cone Type or Geared Head. Our experience of over 20 years' specialization always at your service.

THE CINCINNATI LATHE & TOOL CO.
3207-3211 North St., Oakley, Cincinnati, O.

The "Artisan" Gap-Lathe—

"The Small Lathe with the BIG PUNCH"

IS, WITHOUT QUESTION

Today's greatest value in Small Lathes

Powerful—

Accurate—

Compact—

Priced more than \$100.00 below *any*
Lathe of equal capacity.



—Specifications—

11" Swing over Bed
16" Swing over Gap
24" Between Centers
1 5/16" Hole thru Spindle
Quick-change Gears
Graduated Compound
Set-over Tailstock
Geared Head
Single-pulley Drive

Artisan Manufacturing Company
Station "N"—Cincinnati, Ohio



*Time
tests
all
things*

We have
built good
value
LATHES
for
40 years.

The Sebastian Lathe Company
1000 Culvert St., Cincinnati, O., U. S. A.

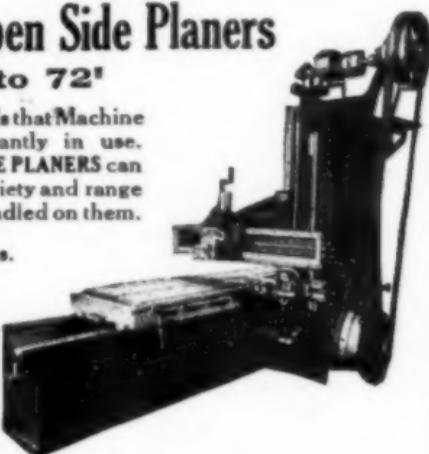
Cleveland Open Side Planers

26" to 72"

Profit making demands that Machine Tools be kept constantly in use. **CLEVELAND OPEN SIDE PLANERS** can do this, due to the variety and range of work that can be handled on them.

Over 1060 installations.

Power Rapid Traverse; Aluminum Drive Pulleys; Counterbalanced Side Heads; Box Tables; all steel Gears; self oiling Bushings throughout the Drive.



Send for descriptive circular

The Cleveland Planer Co., 3148 Superior Avenue,
CLEVELAND, OHIO
Established in 1900



The Most Economical Shaping and Slotting Within Capacities Shown



The Rhodes Shaper and Slotter

is the most economical, because (1) being small, its price is low; and (2) because it is particularly adapted to small work, which of course it handles with greatest facility. It is high-grade throughout. Furnished separate in floor and bench type, and in combination in floor type only.

*Ask your dealer or write for
CATALOG H22*

The Rhodes Mfg. Company
984 Park Road, Hartford, Conn.

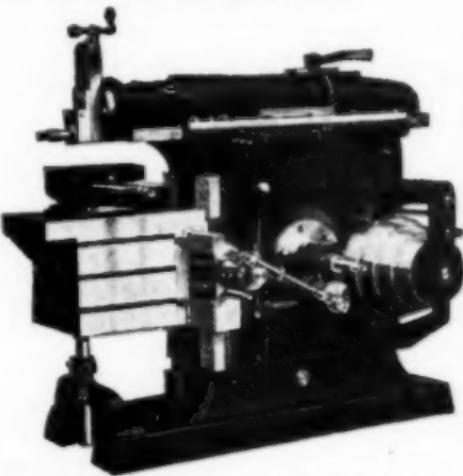
SHAPERS—RHODES—SLOTTERS

SHAPERS

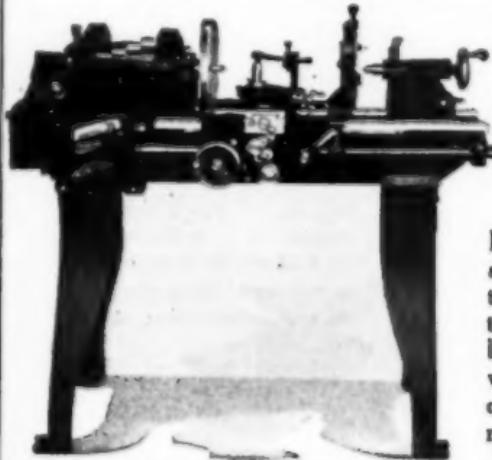
12", 14", 16"
Plain Crank
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through Speed
Box.

Belt Shifter
Regular Equipment
All Cone
Driven Shapers.

32" Back Gear-
ed Crank, Sin-
gle Pulley
Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.



Another Sidney Lathe

Our 11" x 4'
Medium Pattern,
all geared head
type. It is up to
the minute with
built-in features
which insure ac-
curacy and eco-
nomical service.

Write for catalog and prices on the complete
line of Sidney Lathes. Address Dept. 1801

The Sidney Machine Tool Co.
Sidney, Ohio





The
"RAREFIED"
Dust Collector

Does the Most
Thorough Work

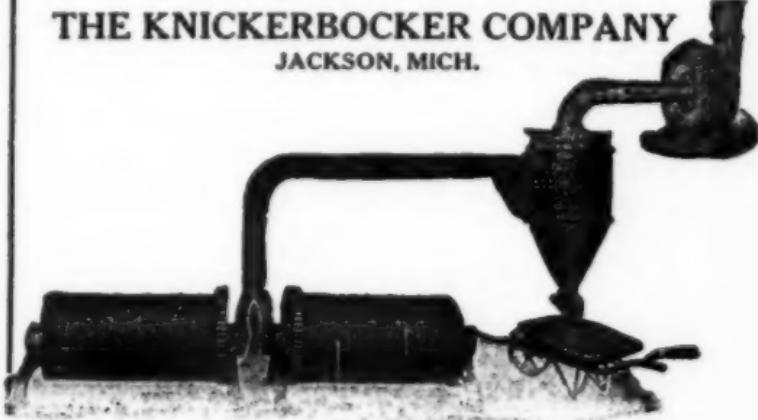
Knickerbocker Says: The "Rarefied" Dust Collector goes after the dust and gathers up practically every bit of it! Keeps your shop as spick-and-span as a New England kitchen.

It Is Successful with all kinds of dust—from emery wheels, sand blasts, tumbling mills, etc. No matter how heavy, gritty or cutting the dust, it does better work at *less cost* than other collectors.

There's No Abrasion of fan parts, and practically no wear from internal friction, as the dust is collected and automatically discharged before the air reaches the fan.

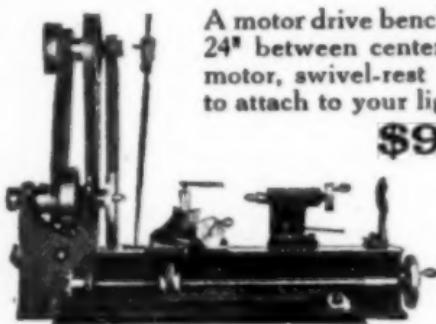
Some plants are now using more than 25 of these efficient Collectors. Glad to mail complete details, or make an estimate on your work.

THE KNICKERBOCKER COMPANY
JACKSON, MICH.



Just-Rite Lathes

Made in Sizes from 10-in. to 20-in.



A motor drive bench lathe, 10" swing,
24" between centers, complete with
motor, swivel-rest and pan, ready
to attach to your light socket.

\$98

JUST-RITE
for turning,
boring, mill-
ing and drilling
(not screw
cutting).

Order one by express. Weight, 230 lbs.

A. V. Carroll Machine Tool Co., Norwood,
Cincinnati, O.

Draw Back Chucks or Thrust Collets

You can get them from

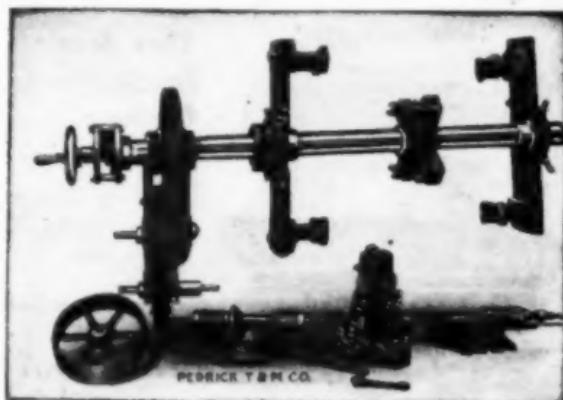
HARDINGE BROTHERS, Inc.
4149 Ravenswood Ave., CHICAGO, ILL.

Bring your collet troubles to us; we have
been specialists in this line for thirty years.

**The name "HARDINGE" on
the article is your guarantee**

HARDINGE BROTHERS, Inc.
4149 Ravenswood Ave., CHICAGO, ILL.

Pedrick Portable Tools



Portable Cylinder Boring Bars

For reboring in position locomotive cylinders and piston valves, cylinders of stationary engines, steam hammers, air compressors, and a wide range of other work. Often it finishes a job before it could be gotten into the shop, saving time, expense and costly delays. Its saving on work that is difficult to move is out of all proportion to its moderate cost.

As for durability, we doubt if you can wear out a Pedrick built bar. Many machines we made 25 years ago are still in use.

We also build Floor Type Boring Machines, Crank Pin Turning Machines, Pipe Benders, Portable Milling Machines, etc.

Write for the Catalog today

Pedrick Tool & Machine Co.
3644 N. Lawrence St., Philadelphia, Pa.



Threading Tool



Right Hand Off-Set Side Tool



Right Hand Turning Tool



ARMSTRONG BROS. TOOL CO.

"The Tool Holder People"

308 N. Francisco Ave., Chicago, U. S. A.

ARMSTRONG Tool Holders

They Save—

High Speed Steel, 90%

Grinding, ----- 70%

Forging, ----- 100%

Over 100 tools for
Lathe, Planer, Shaper,
Slotter, etc.

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"Bridgebilt" Factory Seating and Tool Racks

A diversified line to meet re-
quirements of every branch
of industry.

The Bridgebilt line
will give long and
satisfactory service

For illustrated price list
and discounts write—

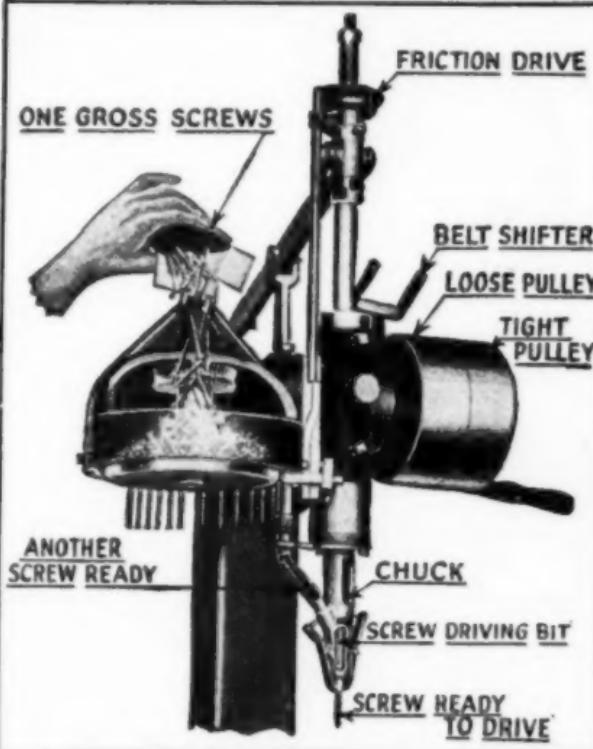
**The Chicago Wire
Chair Co.**

619 No. LaSalle St., Chicago, Ill.



No. 1010-SWS

Lowest-Cost Screw Driving



Showing the Magazine Feed of the Reynolds Automatic

With the Reynolds Automatic Magazine-Fed Screw Driving Machine, a boy or girl easily drives 800 to 1,500 screws an hour.

If you can secure those results on your work, would it not be a most welcome economy? And if so, will you not put it up to us to make good?

Tell us first, please, the dimensions over all of your work, and length and gauge of screws used, so we can get right down to figures which may surprise you.

The Reynolds Machine Company
Dept. H. H.,

Massillon, Ohio



Atlas Arbor Presses For All Forging Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

*Write for our Bulletin—
showing 30 different sizes*

Atlas Press Co.

Department B,
Kalamazoo, Michigan

Lourie's Quick Acting Arbor Presses

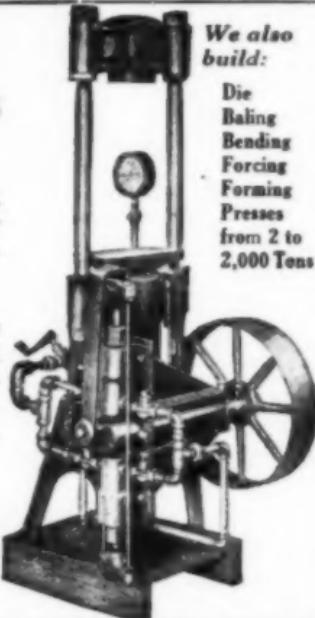
Many Styles and Sizes

The picture shows a small, compact power press for broaching, forming, punching, forcing, etc., etc.

We can produce the press which will do your work well, and at bottom cost, no matter what your requirements may be in this line.

*Put it up to us today—
Glad to make an estimate*

LOURIE HYDRAULIC CO.
Springfield, Ill.



*We also
build:*

Die
Baling
Bending
Forcing
Forming
Presses
from 2 to
2,000 Tons

Universal in Its Adaptation

To EVERY VARIETY of Metal Sawing

**Marvel
Metal
Band Saw
No. 8**

*Always ready
for any sawing
job, on either
large or small
work.*



It saws bars, beams, channels, tubes, etc., rapidly and accurately, and does the finest tool room work. Saws at an angle either way up to 45 degrees without swinging the bar around the shop. Has big capacity up to 18 in. The large bed gives lots of room for material and tools. A saw for every need.

Write for Circular or the Complete Catalog of MARVEL Saws

Armstrong-Blum Mfg. Co.
341 N. Francisco Ave., CHICAGO, ILL.

Send for this
FREE
CHART



Rear
view
show-
ing
motor
mount-
ing

Capacity 4 in. Can
be used as a port-
able. Not necessary
to bolt to floor. Runs
from electric light or
power circuit. Ask
for bulletins on
Racine High Speed
Metal Cutting Ma-
chines of every
Capacity to 16 in.

New Improved "RACINE" JUNIOR

WORM GEAR DRIVE direct from motor is now used. All gears enclosed and running in oil. New Improvements in combination with old superiorities make Racine Junior absolutely free from vibration. The quietest, smoothest running as well as the fastest and most accurate metal cutting machine of its capacity.

Use "Racine" H. S. Wood
and Metal Band Saw Blades
& "Racine" H. S. Tungsten
Power and Hand Hack Saw
Blades. Catalog H.

Racine Tool & Machine Co.
1429 Junction Av., Racine, Wis.
"STANDARD THE WORLD OVER"

No Rough, Broken Edges to Grind

Peter Bros. Abrasive Metal Cutter
Saves Both Time and Material

IN THESE DAYS of high prices every economy must be practised, and this is especially true in regard to the cutting of high speed or other hardened steel. This rapid cutter also goes thru taps, drills, reamers, channels, brass or steel tubing, etc., with a thin, smooth cut. Soon pays for itself.

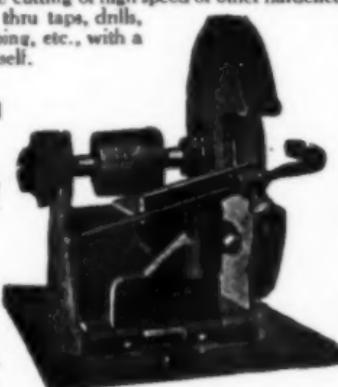
8" Size \$22.50, with C. S.
Splendid for tool room. Cuts all
high-speed steel up to $\frac{5}{8}$ " square.

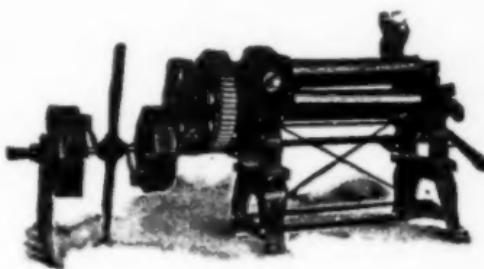
12" Size \$60, with C. S.
Cuts up to $2\frac{1}{4}$ " diameter, round or
square, at any angle up to 45 degrees.
Ball bearing.

15 Days' Free Trial

Write us or ask your dealer

PETER BROTHERS MFG. CO.
115 Railroad St., Algonquin, Ill.





BELOIT

INITIAL TYPE

Sheet & Plate Bending Rolls

The Beloit Initial Type Rolls are built in a large number of sizes and capacities, and for a great variety of work.

The modern design of the Beloit Rolls of this type makes it possible for the operator to curve plates completely to the edge, thus getting away from the undesirable flat near the edge of the sheet.

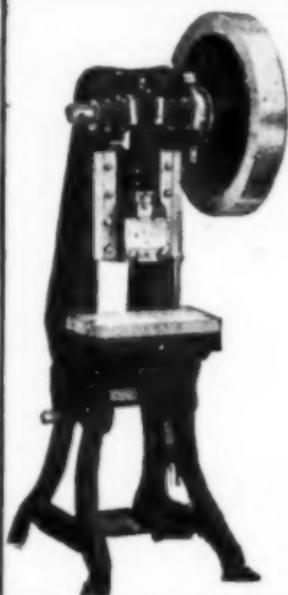
The quick-acting cam lever device raises the top roll for the removal of completed cylinders.

Individual and simultaneous adjustment of both ends of the forming roll can be furnished, and the machine can be arranged for third roll drive, when necessary.

Those in the market for Bending Rolls cannot afford to fail to give us their specifications, and to get our quotations.

We solicit your inquiries for Bending Rolls, either Initial Type as shown above, or the Pyramid Type machine, as well as for Punching and Shearing Machinery, both hand and power.

Hendley & Whittemore Co.
100 S. State St., BELOIT, WIS.



Husky, Powerful

speedy Punch Presses
deliberately designed
for High Production
work.

All Types and Sizes

Write for Catalog

Rockford Iron Works
Rockford, Ill.



Trade **Verson** Mark

Punch Presses

For Accurate Work
Ask your dealer
to show you the
"Verson" Line of
Power Presses,
or write direct for
circulars.

**La Salle
Machine Works**

3013 S. La Salle St., Chicago, Ill.

Manufacturers of Power Presses, Angle Shears and Dies

*More than 3,000 concerns will be using
Danly Die Sets in 1926*

DANLY DIE SETS

Cut Stamping Costs

The outstanding advantages that have caused nearly 3,000 of the nation's leading plants to adopt Danly Die Sets as standard equipment are:

- 1—Saving in first cost of 20 to 50%.
- 2—Convenience of ordering from catalogue by type and number.
- 3—Eliminate shearing of dies.
- 4—Increase the "pieces per grind" 300 to 1000%.
- 5—Minimize overhead and tool-room procedure.
- 6—Maintain press accuracy and minimize human limitations.
- 7—Cuts set-up time about 80%.

You can order by type and number from Danly 34-page catalogue. You can obtain die sets completely assembled ready for immediate use or in the "knock down" for assembly in your plant.

*Immediate shipment from stock.
Ask nearest warehouse for new
34-page catalogue.*

Danly Machine Specialties, Inc.
4913 Lincoln Ave., CHICAGO

Detroit, Mich.
1537
Temple Ave.



Long Island
City, N. Y.
35
Wilbur Ave.



T. H. L. Durable, Rugged Punches

Make Money

They make money, because they insure continuous and profitable production.

They are made right, of the right material, with our experience of 36 years behind them.

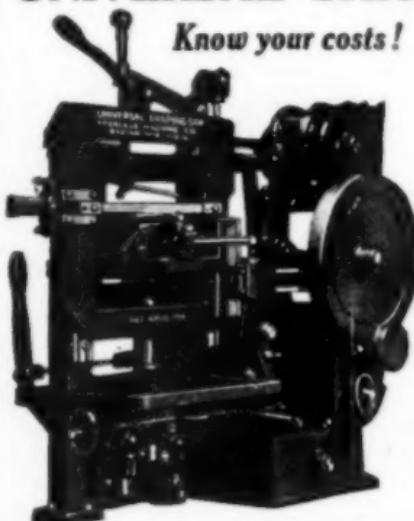
Large stock of regular sizes. Special sizes quickly made.

Our Catalog includes Punching and Cutting Machines, Special Tools, etc.

T. H. Lewthwaite Machine Co.
417 East 31st St., (Est. 1890) New York City

—PEERLESS— UNIVERSAL SHAPING SAW

Know your costs!



Different Principles
Greater Efficiency

Give The Most Of—
Speed
Accuracy
Blade Economy

SIZES:
6" x 6" -- 9" x 9" -- 13" x 13"

PEERLESS
HIGH SPEED HACK-SAWS
6" x 6" 9" x 9" 13" x 13"
Sturdy--Efficient--Reliable

Peerless Machine Co.
1609 Racine St.
Racine, Wisconsin
Write for Details

Spring Press

(UNIFORM BLOW)

Foot or Power

Single and Double Action

These Presses are used in large numbers by manufacturers of electrical devices, jewelry, cutlery, hardware, clocks, radio sets, toys, instruments, etc.

The Uniform Blow a special feature—increases production and eliminates costly inspection.

The Taylor & Fenn Co.

Hartford, Connecticut, U.S.A.

The Springfield Straightening Press

"The Acme
of
Convenience"



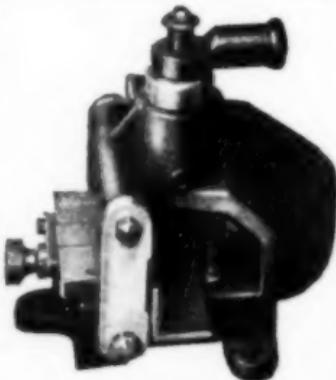
Invaluable
in the
tool room,
also for
straightening
crank and
cam shafts
and other
automobile
parts.

The arrangement of this press is the *acme of convenience*, as any work within the range of centers may be tested and straightened without unnecessary walking from press to lathe each time in straightening rough or finished work. Any length, however, may be operated upon. Press is made in three sizes.

Write for complete description of this handy tool

The Springfield Machine Tool Co., Springfield
OHIO

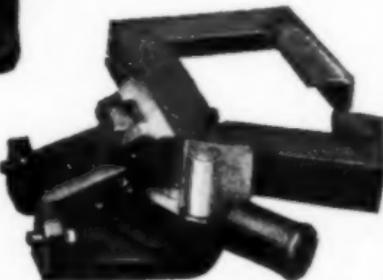
We also manufacture Engine Lathes and Shapers



No. 50 and No. 51 Angle Iron Notcher and Bender

Either can be used individually

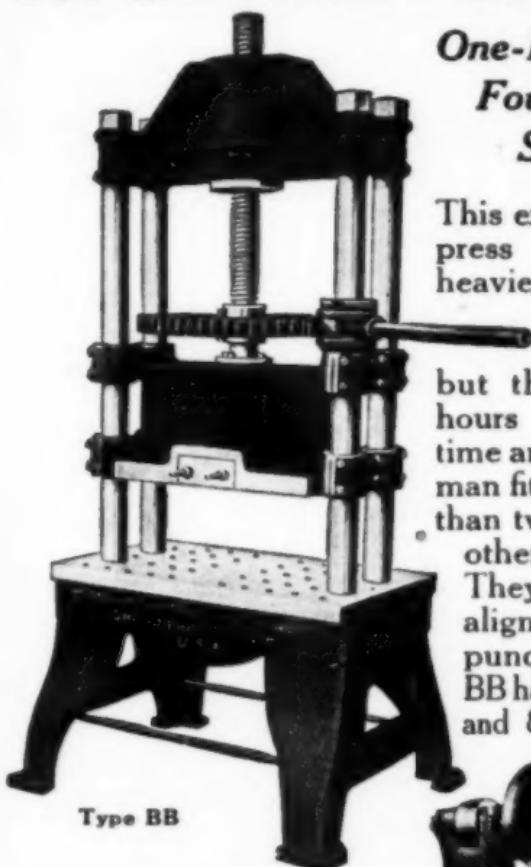
Capacity, will Shear Mitre in
2" x 2" x 1/4" Angle Iron



Write for Prices

**WHITNEY
METAL TOOL CO.**
95 Forbes St.
ROCKFORD, ILLINOIS

The Die Maker's Best Friend



One-Man Four-Post Screw Press

This extremely rigid press is made for heavier work than our three smaller sizes, but they all save hours of valuable time and labor. One man fits dies quicker than two can do on other machines. They give perfect alignment between punch and die. Type BB has 20x36" table, and 80-ton pressure.

Surface Grinder

Powerful—rigid—accurate—no vibration—no noise—a revelation in quiet efficiency. Graduated feeds.

Details and prices for a postal

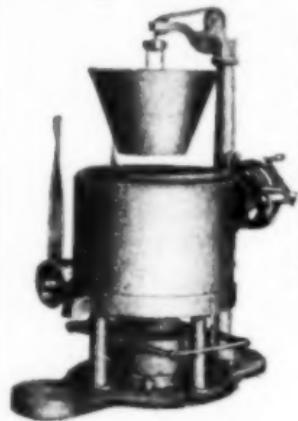
**JARECKI MACHINE
AND TOOL CO.**

Successor to Manhattan Machine & Tool Works
Dept. A. GRAND RAPIDS, MICH.



Stop that Oil Leak—

In YOUR Shop!



Most of your cutting oil is taken away on chips, and unless reclaimed, it is a total loss. A Curtis will save about 90% of this oil, thereby stopping a costly leak.

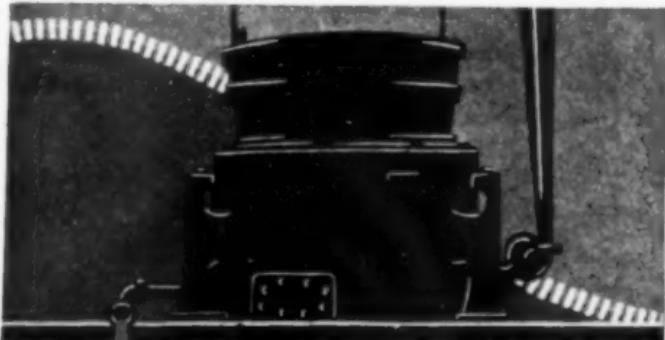
The Curtis Centrifugal Oil Extractor is made in two sizes, belt or motor drive. The illustration shows our No. 400, belt driven, with a capacity of 1½ bushels.

*A Curtis always pays
big dividends. Write
us today for complete
data and prices.*

The Leon J. Barrett Co.,

Worcester,
Massachusetts

Successor to Curtis Machine Co.



**Save
Cutting
Oil!**

6 to 15 gallons per load—
three or four loads per
hour. Write for catalog.

**Tolhurst Machine Works
Troy, N. Y.**

Improved E-Z-Set Boring Tool



Large boring capacity.
Rigid, positive adjustment.
Actuated by worm.
Made in three sizes.
Can't be beat; a trial will prove it.

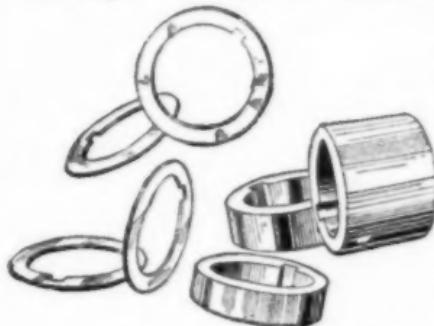
Send for circular

M-P Three Tool Turret



With this Three Tool
Turret, a screw ma-
chine has nothing on
your lathe.

Milling Machine Spacing Washers



Don't

let your men cut
paper washers
for your milling
machines. You
can get steel .003,
.004, .005, .006,
and .010 thick
at \$3.00 per C.

We also make
collars from $\frac{1}{8}$ "
to 3" long.

Necessary Shop Accessories

Manufactured by

The Maxwell Products Co.
Ottawa & Indiana Ave., - Cleveland, Ohio



"CHICAGO"

No. 2

Power
Pipe Threading
Machine

For
Production
and Precision
Threading

PORTABLE

Capacity:
 $\frac{1}{4}$ " to 2" Pipe
 $\frac{1}{2}$ " to 1 $\frac{1}{2}$ " Bolt

Featuring:

1. Quick Die Change
2. Automatic Safety Stop
3. Three Speeds
4. Perfected Oil Control

Send for Catalog

Chicago Pipethread Machine Co., Racine, Wisconsin, U.S.A.



The "GUSHER"

*The Last Word in Machine
Tool Coolant Pumps—*

Of highest efficiency, requires the least power, and stands the wear and tear of time almost indefinitely.

"GUSHERS" are ball bearing, have no gears, no foot or relief valves, no packing nuts, need no priming, and are not injured by grit or small chips.

Capacities, 3 to 30 gallons per minute. Furnished with individual motors for any current, also for belt drive.

Get the Catalog and prices

The Ruthman Mchy. Co.

528-534 E. Front St.

CINCINNATI,

OHIO

PRODUCTION AND SAFETY!

Every plant using lathes, drill presses, shapers and similar cone pulley tools will be interested in the solution of an important problem presented some time ago in our plant:—

It became necessary that we equip such machines with approved belt shifters to meet the safety requirements of the State of Pennsylvania. That much was easy, but to realize the aims of operating ease and efficiency—dependability and durability which we set for ourselves, it became evident that we should have to develop a device.

We knew that the operator will not ordinarily shift oftener than he has to—specially if the operation is slow, inconvenient or unpositive, yet the gain on even a few such machines when consistently run at proper speeds is too great to be ignored.

Some months of thorough study and development resulted in a shifter beyond our expectations. It was approved by the State Board. Continued use in our own plant—favorable comments of experienced shop men and a recognition of the true economic value of this device resolved us to make it available to all.

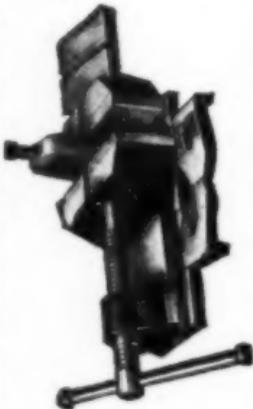
**THE REZNOR
QUICK-ACTING SAFETY BELT SHIFTER**
is today in use in many nationally prominent plants. It is fast and efficient. It is dependable and durable. It is safe, positive and cannot damage belt. It will pay for itself many times in your plant. It requires no other guard on a lathe in the State of Pennsylvania.

*WRITE US TODAY for descriptive circular
and our 30 DAY TRIAL proposition.*

REZNOR MFG. CO., MERCER, PA.

ORDER ONE ON 30 DAYS' TRIAL.

THE G-S COMBINATION VISE



Tools for the Cost of
1
VICE, V-BLOCKS
AND ANGLE PLATE
The most practical Vise for
general Machine Shop use

A GREAT TIME AND LABOR SAVER

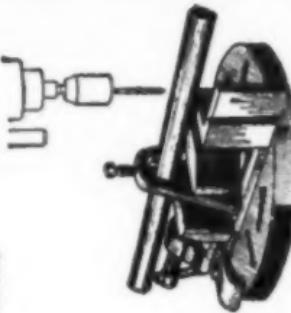
For holding work in Drill Press,
Milling Machine, Shaper or Planer.

features

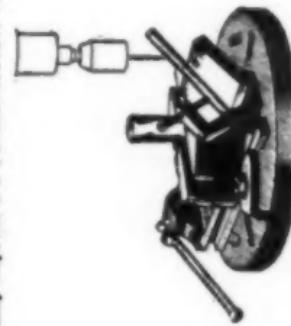
No. 1	Dimensions	No. 2
	Jaws Open.....	7-1/2 in.
	2-1/2 in.....	3-1/2 in.
	Depth of Jaws.....	9-1/2 in.
	9-1/2 in.....	9-1/2 in.
	Width of Jaws.....	2-1/2 in.
	1-1/2 in.....	1-1/2 in.
	Jaws Overhead.....	16-1/2 in.
	W. height.....	6-1/2 in.
	PRICES	
\$15.00	Complete Vise	\$10.00
	V. O. K. Factory	

Dimensions
No. 1
Jaws Open.....
2-1/2 in.....
Depth of Jaws.....
9-1/2 in.....
Width of Jaws.....
1-1/2 in.....
Jaws Overhead.....
W. height.....
PRICES
\$15.00 Complete Vise
V. O. K. Factory

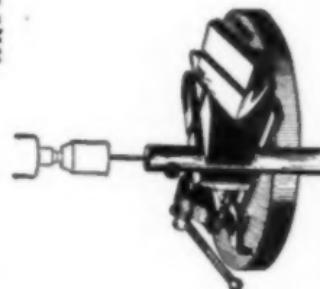
A few of the Many ways the G-S COMBINATION VISE can be used



Work is held in V's with the aid of special
clamp—quick to set up and remove—use
blocks, straps or bolts are necessary.



Shaft held on the angle plate for drilling
holes at any degree. Also short shaft held
in the V vice. This converts Vise to a
handy job for delicate parts.



Long shaft can be held in the overhead
jaws. Here the V serves as a job for
centering shafts, etc.

Germanow-Simon Machine Co.
547 West Avenue

Rochester,



New York

Winterhoff Portable Production Drills

No. 0 JUNIOR DRILL
10½" Swing, 0 to 3/8" Capacity



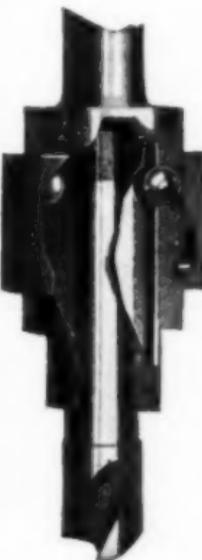
\$55, F. O. B. Elkhart

Winterhoff Tool & Machine Co.
109 South Elkhart Ave., Elkhart, Ind., U. S. A.

Equipped with $\frac{1}{4}$ h. p. motor, two step cone pulley giving speeds of 1100 and 3500 r. p. m., horizontal drive gives full power to the $1\frac{1}{4}$ " endless belt furnished with machine. Driven cone has bearing support at each end, all parts accurately machined and interchangeable. Positively the greatest value ever offered in a machine of this kind.

Drills, Grinders, Disc Grinders, Saws, Sanders. All motor driven.

Send for circulars describing these machines or see your Dealer.



A Real Quick Change Drill Chuck

No hammer or special device required. No separate drift or key to get mislaid. Simply strike the end of drill, and out it comes. A one-armed man can do it.

The Titan Drill Chuck

has all the good features of other chucks of this type, plus a "quick change" that's real. Operates in any position.

Made in sizes No. 0 to No. 5 for any taper shank drill, counterbore, reamer or similar tool. Saves time; cuts costs.

Write for description and prices

Titan Tool Company
Erie, Penna.

Spindle Speeds
to 10,000 R. P. M.



Sigourney No. 0

All Ball Bearing
High Speed Sensitive
Bench Drill Press

AN UNUSUALLY sensitive drill for accurate work at high speeds. Like all Sigourney Drills, it is sold on quality rather than price. All parts are interchangeable.

Sigourney Drills are made with one to four spindles. They are all extremely sensitive, accurate and durable.

Write for
Booklet today

THE SIGOURNEY TOOL CO., Hartford, Conn.

U. S. Sensitive

**Motor
Driven 14" Floor Drill**

A simple, rugged, convenient drill, built by machine tool manufacturers. Drills holes up to $\frac{1}{2}$ "—quickly, accurately, economically.

**Price with motor,
switch and belts - \$115**

**Or with Counter-
shaft for Belt Drive \$70**

Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Write for folder, or better still, send in your order.

The U. S. Machine Tool Co.

1952 W. 6th St., Cincinnati, Ohio





Several Holes— At Cost of One

A *U. S. Multiple Spindle Drill Head* transforms your single-spindle drill into a multiple spindle.

You can drill two or more holes with the same speeds and feeds you use for drilling one.

Patented double adjustment permits drilling in any pattern. Special heads to order, with adjustable or fixed spindles.

*Let us help you reduce
your drilling costs*

The United States Drill Head Co., 1952 W. Sixth St.,
CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

Muehlmatt Sensitive Drill

Its paramount feature is *Quality*, backed by an experience of 30 years in producing small precision tools.

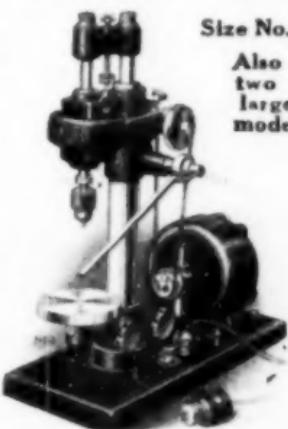
The "Muehlmatt" is really sensitive, having the "feel" necessary for drilling holes down to .010" in diameter, with the sturdiness for production work.

Soon becomes indispensable in the tool room, laboratory or experimental department, and on production work it usually increases output 25 to 100 per cent.

Over half of our business is repeat orders. Write for the exceptionally strong testimonials, also for complete description, showing exclusive features.

Size No. 1

Also
two
larger
models



Adolph Muehlmatt

434 Elm Street,

Cincinnati, Ohio

No Smoke

No Fumes

KASENIT

Non-Poisonous

Non-Inflammable

Non-Explosive

KASENIT No. 1
For Fine Work and
Very Rapid
Hardening

Sold in $\frac{1}{2}$ lb., 1 lb.,
3 lb., $\frac{5}{8}$ lb. and
10 lb. tins

KASENIT No. 2
For General
Hardening

Sold in 25 lb. and
50 lb. kegs

Write for Booklet "C" on hardening. Ask your dealer or write—

**KASENIT COMPANY, 2 & 4 Stone Street
NEW YORK, N.Y.**



A Tool for Your Needs

The Walton Tap Extractor!

When That Tap Snaps—you have to pay for both the time it takes to remove the pieces, and the delay to the work in hand.

Keep the Expense Down—by using a Walton Tap Extractor. Simply insert the fingers of this handy device into the work, give it a few twists, and the tap backs out easily and safely.

Sizes No. 8 to $1\frac{1}{4}$ "—60 Days' Approval

*They've reduced shop costs for others—
They can do so for you*

The Walton Company
Hartford, Conn.

Thor

Electric Drills —

*Push the Button
and It's Ready*



Men who use a THOR Portable Electric Drill, tell us that it is exceptionally easy to operate and control. The easy operating push button switch enables the operator to start or stop at will.

The handle is comfortable and gives positive control over the drill.

THOR Drills are built of easy running, rugged parts that insure durability and economy. Jacobs Chucks, ball and roller bearings, double-silk wound coils, and other high grade parts are standard equipment.

All THOR Electric Drills have a ground wire—an exclusive safety feature. Shocks are impossible!

Independent Pneumatic Tool Co.
600 W. Jackson Blvd., Chicago, Ill.

“Utility” Interchangeable

Counterbore
and

With the Pilot
that **cannot**
twist off!



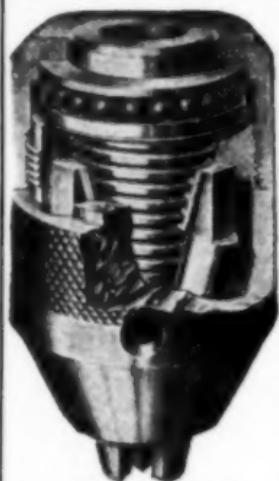
Spot
Facer

Pilots don't break.
Cutters don't break.
Cutters are easily removed
from holders.

Set screws don't come loose.
Cutter drive is simple and
powerful.
Counterbore and spot facer troubles
practically eliminated.

If you're interested in economy, send for
the Catalog. You'll be glad you did.

The J. C. Glenzer Company
6469 Epworth Boulevard
DETROIT, MICH.



Hand-operated
Self-tightening

Etco

Keyless—Ball Bearing Drill Chuck Continuous Grip

As the load increases the *Etco* grips harder. It releases by hand—always. It saves time, drills—and chuck repairs are practically eliminated.

Send for details of special exchange offer
Use ETTCOS on your electric drills

Eastern Tube & Tool Company, Inc., 600 Johnson Ave., BROOKLYN, N.Y.



Style "WC"



Style "O"



The Hinge



Style "G"



Style "A"

Gits Gravity and Wire Wick Feed Oilers

Gravity Feed—flushes
the bearing.

Wire Wick Feed—gives

desired prolonged feed.

Wire Wick—replaces
waste or felt.

Made in Standard sizes.

Write for Catalog

No. 20



Style "L"

Showing 255 full size
illustrations with detail
dimensions.



Style "U"

GITS OIL CUPS

Oil cups for every lubricating
need. State style and size in
which you are interested, and we
will send free samples and catalog.



Style "T"

GITS BROS. MFG. CO
1940 SO. KILBOURN AVE., CHICAGO



Positively Eliminates All Tap Breakage

In constant use for over ten years, it is daily performing the most difficult work of tapping tough metals, blind tapping, and bottom tapping in shallow holes. The up-to-date

Woodstock Improved Safety Tapping Chuck

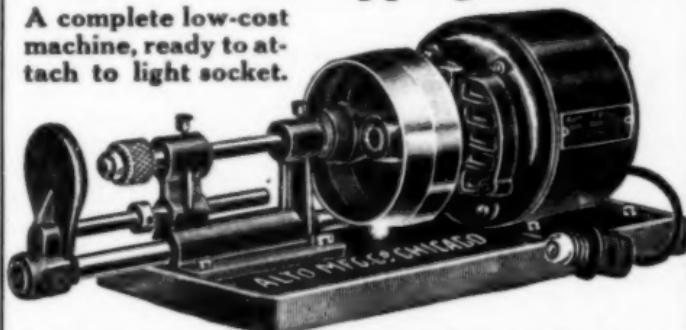
automatically releases tap the instant it binds or touches bottom, positively eliminating tap breakage. Used by U. S. Government and leading automobile manufacturers. Made in five sizes.

Write for details and trial offer

Peter Bros. Mfg. Co., 115 Railroad St.,
ALGONQUIN, ILL.

ALTO Motor Driven Tapping Machine

A complete low-cost
machine, ready to at-
tach to light socket.



Its main points are—(1) High speed, with reverse three times as fast; (2) Compact and complete, ready to attach to light socket; (3) So simple in construction that we can sell this high-grade tapper at a low price. Just what you've been looking for. We also make larger motor driven Tapping Machines.

Write for description and the reasonable price

The Alto Mfg. Co., 1647-51 Wolfram St.
Chicago, Ill.

Motor Driven, \$42 to \$47

Belt
Driven
\$19
to
\$22



Burke 10"

BENCH DRILL

Extremely accurate,
very sensitive and
of Burke Quality.

Excellent for pro-
duction work. A real
time and money
saver when placed
at convenient points
about the shop.

*Send for Catalog
of Drilling, Tapping
and Milling Machines*

The Burke Machine Tool Co., 297 E. 16th St.,
Conneaut, Ohio

A RIVETING PROBLEM? LET GRANT SOLVE IT!



Many an awkward riveting job has
had to be done by hand until they
investigated the

GRANT ROTARY RIVET SPINNER

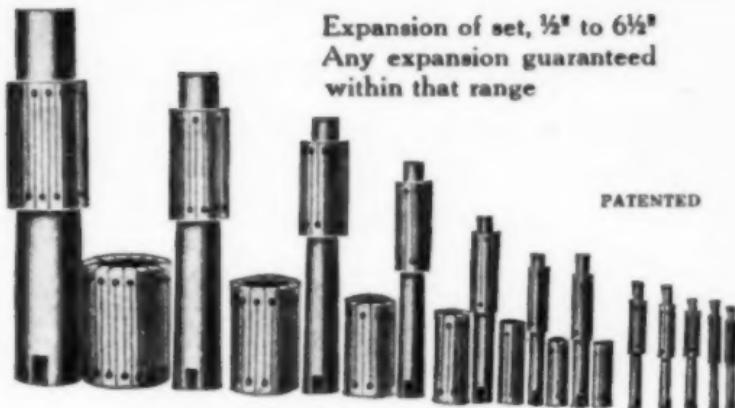
It is especially adapted to handling pieces
of awkward shape and to work in hard-
to-get-at places. And besides

It Is Noiseless —

All work is uniform, as tight or loose as
desired, with highly polished heads; its
speed is a rivet per second, and it may be
operated by cheap help.

*Write for Catalog and send us a sample
of your most difficult work for riveting*

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.



Expansion of set, $\frac{1}{2}''$ to $6\frac{1}{2}''$
Any expansion guaranteed
within that range

PATENTED

ONE SET OF 12

Champion Expanding Mandrels

Will fill by thousandths any
inside diameter from $\frac{1}{2}''$ to $6\frac{1}{2}''$

The cost is about one-fifth that of solid arbors of equal range graduated by sixteenths.

And they are so simple—only two parts; so handy, always ready for any job; and so efficient.

They are suitable for all classes of work, large or small, in all kinds of metal. They hold work of any length of bore and do not chatter. They are lighter, more easily handled, and keep truer than common mandrels. They release work easily. And the grinding of all parts after hardening insures the greatest accuracy.

Our Catalog also describes

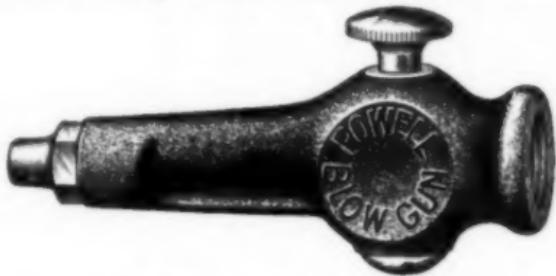
Champion Tool Holders, Champion Emery Wheel Dressers, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co.
SPRINGFIELD, OHIO

POWELL BLOW GUN

Designed to dispense AIR with utmost economy

Used for cleaning machines, machine tools and work benches



Made with different tips for special requirements.

Circular on request

The Wm. Powell Co.

2525 Spring Grove Ave., Cincinnati, O.

Round



Flat



Oval



Fillister



“Economy” Screws Are Right

Made *right*, of the *best material*, with heads free from burrs—especially suitable for screw machines. Can ship promptly all standard sizes, iron or brass, with four styles of heads. If you cannot get “Economy” Screws from your jobber, write us, giving nearest jobber's name and address.

Economy Screw Corporation,
5213 Ravenswood Ave., Chicago, Illinois

The Nicholson Patented
Expanding Mandrels
Are Saving Lots of Money



Strong! **Rigid!** **Accurate!**

YOU LOSE no valuable time, nor is a job delayed, when a set of Nicholson's Mandrels are available. Compared to these up-to-date tools, solid mandrels are an expensive make-shift.

Nicholson Expanding Mandrels come in sets of nine, with two or three sets of jaws for each. And **one set** will cover the **entire** range between one-half and seven inches, inclusive. In other words, at least one of these mandrels will take absolutely **any** hole, no matter what it is, between these two dimensions, without caliper or guess work, and the nine will replace **all** the solid mandrels.

They are adaptable to work of the most varied nature. They save time and labor out of all proportion to their moderate cost.

*Write today for the instructive Booklet
and our 30-day trial offer*

W. H. Nicholson & Company
117 Oregon Street, Wilkes-Barre, Pa.

Anderson Improved Balancing Ways

Ever-Ready—Sensitive—Reliable



They need no adjusting. The rotating discs made of chilled iron run in specially designed ball bearings and are exceptionally sensitive. You will like 'em.

The six sizes have no equal for balancing pulleys, gun brushes, turbine rotors, crank shafts, polishing wheels, fly wheels, etc.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards.	20"	30"	30"	66"	88"	20"
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight.	45	90	150	350	650	—
Code	Bend	Bid	Bis	Bib	Ben	—

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"



are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

Send for Catalog "F"

The N. P. Bowsher Co., **South Bend, Ind.**



Sharp saws at 5¢ each

That is all it
costs when
RESHARPENED
on this machine

**SAVES TIME
REDUCES WORK
ADDS EFFICIENCY**

That's Why

Amer. Brass have.....	19
Continental Fibre.....	28
Formica Insulation.....	10
and over 100 Newspapers use them	

The Model J

at a speed of

70 TEETH A MINUTE
sharpens all medium,
soft or spring tempered
CIRCULAR SAWS
up to 18" in diameter.
Teeth from as small as 32 to
1" up to $\frac{1}{2}$ " spacing.

Write for Catalog

THE WARDWELL MFG. CO.

Makers of automatic machines for sharpening—Hack Saws, Hard Tempered Band Saws, Milling, Splitting and Screw Slotting Saws and all Woodworking Saws.

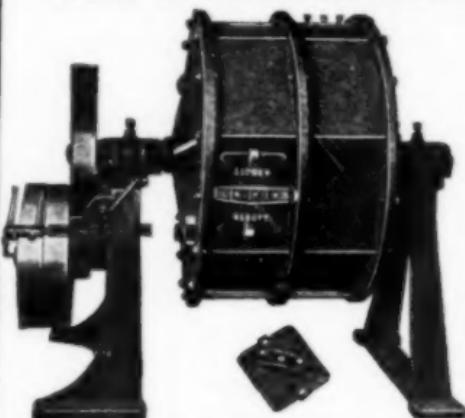
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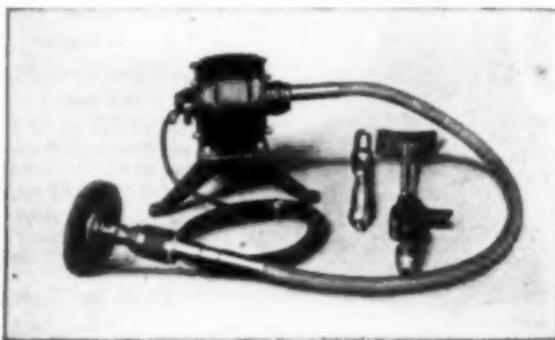
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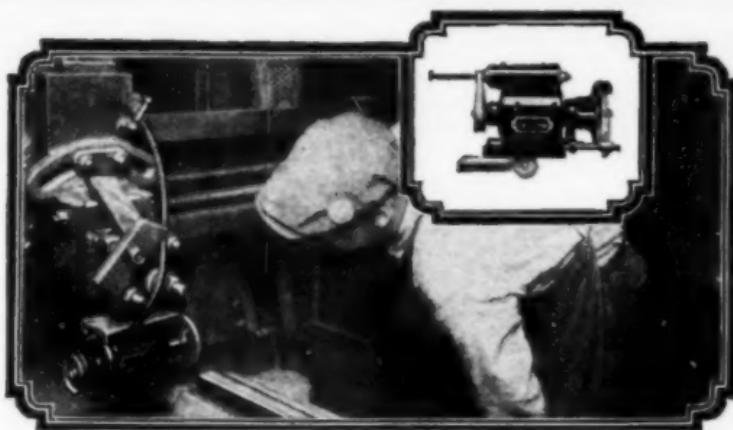
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Will cut the cost on any unhandy
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Helping Willys-Overland Take America Off Its Feet

IN THE Willys-Overland plant at Toledo, Dumore grinders play an important part. How well they fulfill every demand made of them—how accurate and adaptable they are for all varieties of grinding work, is convincingly illustrated in the hood panel forming—die grinding job pictured above. And when you consider that this is but one of many difficult operations successfully handled by Dumore grinders at the Willys-Overland works, you'll agree that these efficient tools assist materially in "taking America off its feet."

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DUMORE HIGH SPEED GRINDERS

ALL Grinding on ONE Machine



Thompson
10'x36'
Universal

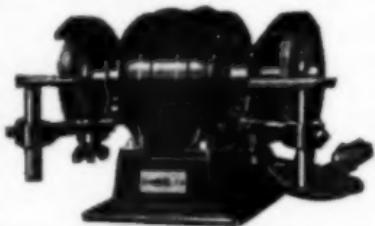
Does plain, surface, edge, die and cutter grinding like single-purpose machines.

The work adjusts to a fixed grinding wheel—an exclusive feature that's better.

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*Have
Eight
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Which we want
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Equip Your Plant throughout with Bodine-Built Grinders, driven by Bodine-Built Motors, and there will be no excuse for robbing your production with dull tools in any department.

The "Eight Outstanding Advantages" are real, for the purpose of insuring sharp tools and better production—a tremendously important consideration.

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**The "D & W"
Flat and Rotary
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You Will Find our line a revelation in practical efficiency. They hold an immense variety of steel and iron pieces for grinding, planing, shaping, milling. Our rotary chucks are very successful in plants making ball and roller bearings; especially good to hold ball races when being ground to finished size. Our attachments convert a flat chuck into a Vertical, Taper or Swiveling type, as wanted.

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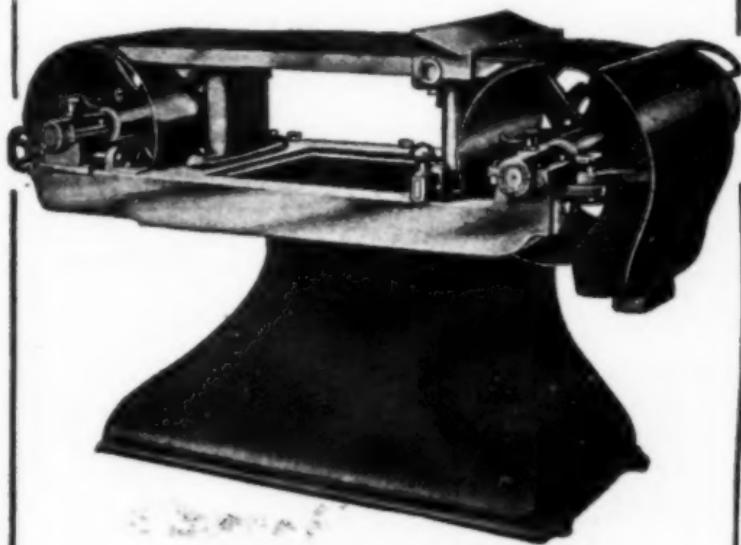
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Will reduce grinding and finishing costs
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Can be substituted for many expensive
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Made also in vertical and bench models.

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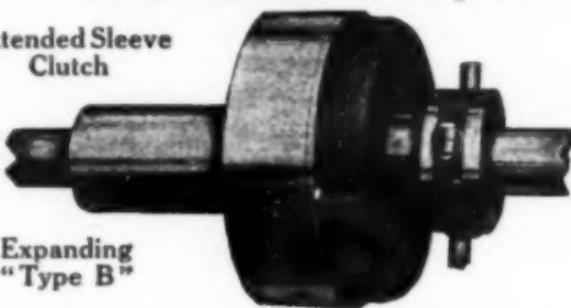
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Federal Products Corporation
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For All Transmission Purposes

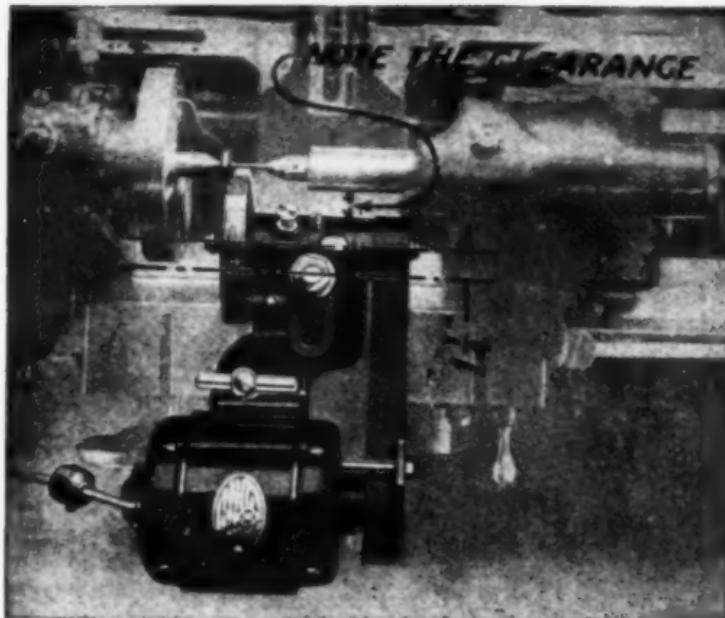
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Clutch



Expanding
"Type B"

This clutch is designed for driving wood, steel or cast iron pulleys, gears, drums, rope sheaves, sprocket wheels, etc., on the sleeve. Edgemont Friction Clutches are made for all transmission purposes. Glad to advise on your needs—right now.

Edgemont Machine Co., Inc., **DAYTON,**
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The Smallest Piece can be Ground Between Centers

The most **Precision Grinder** And it's
Flexible Portable
For Internal and External Grinding

It has the sturdy construction to meet every demand, yet is light enough to be portable and usable on the various machine tools in your plant.

Built on a precision basis, it is particularly valuable where the allowable limits are held inside of tens of thousandths of an inch.

Those who are using this highly developed grinder, find it a most valuable addition to their tool room or machine shop equipment.

Write for our Booklet, which describes many new features and illustrates several operations in internal, external and surface grinding.

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Make it easy and pleasant for the mechanics in your shop by installing a

CANTON PORTABLE CRANE, HOIST AND TRUCK

to tote around your machinery and heavy, awkward stuff. They save time and temper, toes and fingers. Your choice of several sizes.

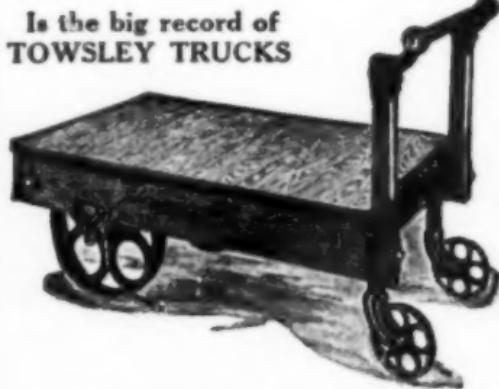
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Kent Six Spindle Driller

A Semi-Automatic Machine for Drilling Six Holes
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This High Speed Multiple Driller has twelve fixtures on the drilling table, in two groups of six each. While six of these fixtures are in front of the drill spindles, the other six are automatically unclamped, to be unloaded and loaded by the operator. The shifting of the table and the locking of the work are both automatic.

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IN SHOPS where the work does not warrant the buying of a special machine, this attachment will be found a top-notch auxiliary. Can be mounted on any standard lathe. Standard cutters of single and multiple type can be used. The construction assures perfect threads, right or left hand.

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Save Time Setting Gang Milling Cutters

Eliminate
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Ground



"Wear-Ever" Adjustable Spacing Collars
permit setting cutters to the thousandth part
of an inch without removing from the arbor.

*Stock sizes for $\frac{3}{4}^{\prime\prime}$ to $2\frac{1}{2}^{\prime\prime}$ arbors, sent on approval
They are adjustable in 12 steps of $2/1000$ inches*

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Steel Spacing Washers—

Made of a good grade of Cold Rolled
Strip Steel, also known as Shim Steel



Stock sizes for arbors of
following diameters: $\frac{3}{8}^{\prime\prime}$,
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Stock thicknesses: .002,
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Other thicknesses up to
3.000" made to order, with
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Many New Tools



PATENTED

Genesee Adjustable Hollow Mill—has adjustable, replaceable blades, which can be replaced at small cost, and this saves you buying many a new tool. They are ideal for finishing forgings, castings, etc. You can adjust them to the 1000th of an inch in a few minutes, and are designed to utilize machines to their full capacity.

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Established 1908

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Manufacturers of Genesee Rapid Production Tools

Just Once And That's All

It goes thru the hole and mills the internal keyseat. The cutter is rotary and while the tool slides thru the hole the keyseat is being completed. It is made in 20 different sizes and is used in the drill press.



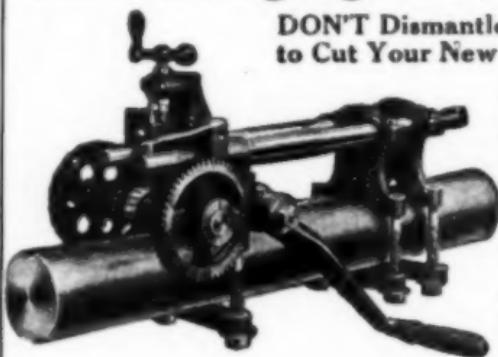
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Use a
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Cuts accurate
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up to 5" diam.

Seven sizes. Operates by hand or power

Over 9,000 in use; order now and save money

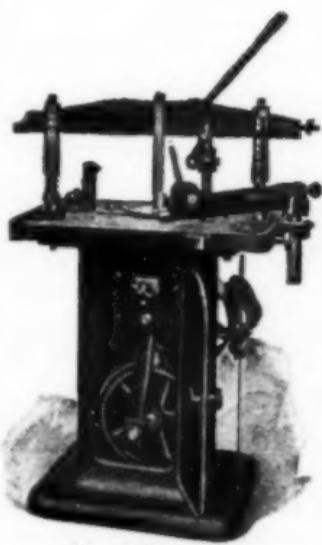
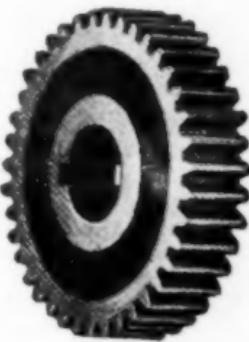
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No. 1 Keyseater

You need a "DAVIS" for such work, because it will give you the same satisfactory service it gives users everywhere.

Nothing better for cutting keyways in pulleys, gear blanks, bell cranks, crank handles, etc., and for oil grooving and similar work.

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Davis Keyseater Company

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Patented
Jan. 30, 1917

**New "AUTEX"
Extension Reel
1925 Model**

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Don't Forget the Swivel Joint Feature

Type 6 Rapidly finding a place in large
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Now equipped with Belden Rubber Cord

Approved by the Underwriters

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A Catlin Cuts a Keyseat 6"x1"x7/16"



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Many other time-saving examples could be cited to show what is being done with this up-to-date, rapid keyseater in the run of an ordinary day's work.

Simplicity is the keynote of all Catlins—they contain less than half the number of parts of other keyseaters. And ordinary help soon becomes expert with them.

Nos. 0, 1 and 8 Keyseaters have crank motion. All other sizes have the rack and pinion drive. On some classes of work it is possible to keyseat piece after piece without clamping down the work or stopping the machine.

The Picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically all keyseating requirements.

Chattanooga Machinery Company
2401 Bennett Ave., Chattanooga, Tenn.

Vanderbeek Universal Joints

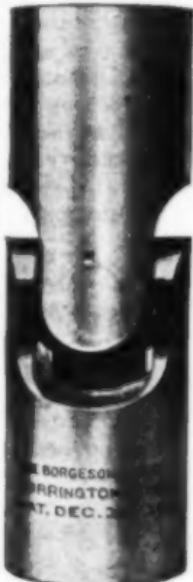


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Vanderbeek Joints are in daily use on thousands of machines.



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American Tool Works, Inc.
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"Borgesons Universal Joints"

Are you a user of Universal Joints?
If so!

Remember well and bear in mind that a good Universal Joint is hard to find. But if you want one tried and true, you will want the "Borgesons" before you are through.

You will become not only a "Buyer" but a "Booster" for "Borgesons."

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Should you require Special Universal Joints, be sure to write for quotation.

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Adjustable Threading Dies FOR BOLTS AND RODS

Requiring no reversing to remove them.
Also adjustable centering jaws in the new pattern



"DUPLEX" Die Stock Set

Each cutting edge on separate flat piece makes
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Piston Rods

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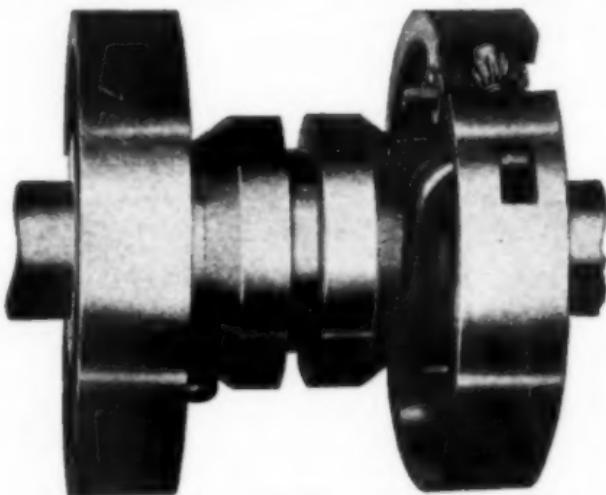
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Found in the CMT Close Coupled Clutch

It's a type specially designed for cramped and crowded installations where the clearance is in fractions, and where transmission of power must be effected in a minimum amount of space. None of the standard Conway features is sacrificed in this design except the full length shaft bearing.

Applications of the close coupled type are usually of heavy duty character, where the clutch's ruggedness and capability for punishment are essential for the successful functioning of the operating machine.

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It's your move. Drop us a line today.

The Conway Clutch Company

1951 Riverside, Cincinnati, Ohio

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Boring, drilling and tapping machine, No. 12 Pawling & Harnischfeger

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Press, No. 58 Toledo s. s. geared.

Radial drills, 36" Cincinnati-Bickford, single pulley drive, (2).

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2—No. 2 Garvin duplex milling machines, back geared, power feed, oil pan bed, tank, and piping; table, 8x51; automatic table feed, 30",

Now arranged for motor drive; will change if desired.

Price, each, f. o. b. Bridgeport, satisfaction guaranteed, \$575.00.

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Planer, 16x16x36" Pratt & Whitney, with vise..... \$ 175.00.

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Lift trucks, Cowan and Geo. P. Clark.

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14" Smith & Mills crank (2)..... \$225. 17" Smith & Mills b. g. crank..... \$375.

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42" Baush, 2 swivel heads, 75%.	100" Niles, 2 heads.
42" Bultard rapid production, with one swivel and one turret hd., 80%.	10"-16" Betts, 2 swivel & 1 center hd.

7" Betts, double head, 85%.

60" Niles, 2 swivel heads and one internal boring head.

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15,000 lbs. to 25,000 lbs. Waterbury-Farrel, United Engineering and Standard; 20" draw, with 18' extensions for mandrels, heavy cast iron; 85%.

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4-spindle 20" Barnes, 85%.	4-spindle Barr sensitive, 85%.
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4' & 5' Bickford.	No. 1, 8' wall radial.
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24" Cincinnati, slid. hd., fric. bk. grs.	32" Cincinnati, with tap. att., 75%.
28" Cincinnati, sliding head, 80%.	24" No. 25 Foote-Burt, 90%.

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1, 2, 3, 4 & 5 Bulldozers.	250-ton Mesta steam hydraulic, 85%.
1", 2" & 4" Forging machines.	1", 2" & 4" Forging machines.

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No. 3 Brown & Sharpe univ.. 70%.	18x96" Norton plain, 75%.
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84" Diamond surface, 85%.	

No. 4 Gardner, motor, disc, 85%.

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No. 2 Nazel, air, arranged motor dr.	1500-lb. Waterbury-Farrell, board drop, 80%, (2).
100-lb. Bradley, helve, 75%—90% (3).	2000-lb. Waterbury-Farrell, board drop, 80%, (2).
350 lb. Bement Miles, steam forging.	2500 lb. Bement-Miles, stm forging.
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16" to 20" tool room, various lengths.	32"x32' Bridgeford, comp. rest, m. d.
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Style "B" Gooley & Edlund, 80%, (2).	Becker miller, model "C," table 14"x54", motor drive, 85%.
No. 2 Cincinnati plain, 80%.	60"x42"x16' Ingersoll, fixed rail, 4 hds.
No. 3 Brown & Sharpe, plain, 65%.	
No. 3B Brown & S., pl., heavy, 60%.	

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30"x30"x8' Gray, single head, 80%.	72"x72"x16' Betts, four heads, 90%.
48"x48x18' Pond, 4 heads, heavy duty.	60"x48"x16' Pond, 2 hds., old style, light pattern, 50%.

PIPE MACHINES.

No. 2½" Merrill, capacity 2½" to 8".	
2", 4" & 8" Jarecki, with dies and countershaft, late models, 85%.	

PRESSES.

No. 57 Toledo trimmer, with side shear, 80%.	
Waterbury-Farrel trimmers, 60" flywheel, 80%, (2).	
50" Toledo, straight side, single crank, tie rod frame, 80%.	

No. 56 Consolidated, 4" stroke, 80%.

SECOND-HAND MACHINERY

Cyril J. Bath & Co.—Continued

PUNCHES AND SHEARS.

6x6 Hillis & Jones angle shear.
No. 26 Whitmore slitting shear.
No. 2 Hillis & Jones horizontal punch, 70¢.
54" gap American ship punch, capacity 1" thru 1", 70¢.
84" throat, Long & Allstatter capacity about 1" thru 1".
Kling Bros. horn press, 60" horn, flywheel 50" dia., 6½" face.
48" throat No. 4 Southwark, capacity 2" x 1".
60" throat No. 5 Southwark, capacity 1½" x 1".
36" throat style G, Cleveland, capacity 14" x 9" flat or 2½" round bars.
No. 6 Quickwork rotary shear, capacity up to 1½" plate.
36" throat Lennox rotary shear, capacity about 1" plate.
No. 2 Garrison alligator shear.

SAWS.

48" Newton cold saw, motor drive. | Power hack saws, 6" to 9".
SHAPERS.

20" American, crank, belt, 80%. | 24" Walcott, crank, back geared, 90%.

SLOTTERS.

48" Niles-Bement-Pond, motor dr. | 12" Sellers, 75%.

TUMBLING BARRELS.

Several sets 18" x 48" chill lined square, with roller bearings and exhaust.

TURRET LATHES AND SCREW MACHINES.

21" Gisholt, standard model, 70%. | No. 3A Warner & Swasey.

3" x 36" Jones & Lamson.

MISCELLANEOUS.

Acetylene generator, Davis.
Blower, No. 4 Root, motor drive.
Blower, American, 9" fan, motor driven, 85%.
Blowers, Sturtevant, motor driven, 85%, (2).
Boring machine, for cylinders, portable, 4" bar, 7" feed, arranged for motor
or engine drive, 75%.
Gear cutter, 36" Gould & Eberhardt, 60%.
Keyseater, No. 2 Davis.
Keyseater, No. 4 Mitts & Merrill.
Pyrometer, Brown.

FOR SALE BY

Hill, Clarke & Co., Inc., 156 Oliver St., Boston 9, Mass.

BORING MILLS.

Niles 53" vertical with two swivel heads. Excellent condition.

PLANERS.

Whitcomb 17" x 4".

Putnam 22" x 5".

Whitcomb-Blaisdell 24" x 8", two rail
heads, (second belt drive).

Gray 36" x 36" x 8' heavy pattern, spur
geared, one rail head, one right
hand side head.

Pond 36" x 36" x 16' two rail heads.

ALLIGATOR SHEAR

Canton Fdry. & McHe. Co.'s No. 2 Alligator shear, cap. 1½" round or square.

SURFACE GRINDERS.

Brown & Sharpe No. 2.

Diamond No. 1, 24" x 12".

Pratt & Whitney 12" vertical, 24"

feed.

CUTTER AND TOOL GRINDERS.

Greenfield No. 1, latest model.

Norton No. 2, 24" auto feed.

BENCH LATHES.

American Watch Tool Co's 7x32". | Stark No. 3½, with grinding attach.

PLAIN MILLING MACHINES.

Brown & Sharpe, No. 1½ plain, cone drive.

Cincinnati, No. 2 and No. 3 plain, cone drive.

Milwaukee, No. 3B plain, single overarm, single pulley drive, one has ver-
tical milling attachment.

Cincinnati No. 3 high power plain, constant speed drive type, arranged for
motor drive.

UNIVERSAL MILLING MACHINES.

Garvin No. 1, cone drive, geared feed thru gear box, excellent condition.

SECOND-HAND MACHINERY

FOR SALE BY

W. P. Little Co.,

West 9th & Front Sts., Cleveland, Ohio
LATHES.

14" x 8' LeBlond, q. c. g.
16" x 6' Bradford, q. c. g., t. a.

16" x 10' Cincinnati, d. b. g., q. c. g.
26" x 9' Bridgeford, d. b. g., (new).

MILLING MACHINES

18" Cincinnati plain.
No. 13 Garvin b. g. plain.

8" Pratt & Whitney automatic.

PUNCH PRESSES.

No. 18^{1/2} Holden, o. b. i.
30" Geared arch press, old type.

S. G. 55 Ferracute double crank.

GRINDERS, INTERNAL AND EXTERNAL SURFACE.
No. 3 Modern universal.

No. 14^{1/2} Williams & White, (2).

16" Head rotary surface.

No. 75 Head internal, (8).

14" Pratt & Whitney vertical surface.

No. 6 Bryant internal, (2).

MISCELLANEOUS.

Air compressors, 4^{1/2}" x 4^{1/2}" & 6" x 6".
Angle shear, No. 7C New Doty.
Band saw, 30" Clement.
Bolt cutter, 2" Reliance.
Boring mill, Lucas horiz. 2^{1/2} bar.
Broach, 3-A LaPointe Hudson.
Cold saw, 20" Burke.

Hammer, 250 lb. Morgan steam.
Hammer, 50 lb. Bradley, compact.
Planer, 24" x 10' Pratt & Whitney.
Screw mch., No. 1 Brown & S. auto.
Spline miller, 2" Pratt & Whitney.
Tumbling barrels, tilting, (2).

Partial list. Send us your inquiries. 150 other tools in stock.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St.,

St. Louis, Mo.

MILLING MACHINES.

No. 14 Rockford plain.
No. 1 Knight vertical.
No. 12 Kempsmith.

No. 33 Kempsmith.
Nos. 0 and 3 Burke bench.
Whitney hand miller.

PLANERS.

30" x 30" x 8' Cincinnati.
32" x 30" x 7' Whitcomb.
14" x 6' Monarch, q. c.
15" x 8' Von Wyck, q. c.
18" x 8' Walcott.
20" x 10' Lodge & Shipley.

36" x 36" x 10' Flather, 2 heads.
48" x 48" x 14' Gray, 2 heads.

LATHES.

3' arm Carlton.
3^{1/2} arm Carlton.
4' arm Bickford.
30" x 84" Diamond face grinder.
5" x 18" Ott.
10" x 30" Ott universal.
6" x 30" Pratt & Whitney plain.

24" x 12' Bridgeford, q. c., heavy duty.
26" x 13' Putnam.
24" x 14' Economy, p. c.
30" x 16' Schumacher & Boye, q. c.

DRILLS.

3' Canedy-Otto post drill.
24" Aurora, sliding head.
38" Bickford, sliding head.

GRINDERS.

No. 16 Brown & Sharpe, 10" x 72".
No. 50 Gardner disc.
No. 2 LaSalle surface grinder.
Yankee twist drill.

MISCELLANEOUS.

Acetylene generator, 100 cu. ft. cap.
Air compressors, (6).
Belt lacer, large, Peerless.
Bolt cutter, 1" Landis.
Bolt cutter 2" Standard.
Bolt cutter, 3" Standard.
Boring machine, horizontal, No. 2 Pawling & Harnischfeger.
Bulldozer, 75-ton Lourie hydraulic.
Draw bench, Standard Mchry. Co.
Engines, Corliss, 75 to 200 h. p.
Gear generator, No. 3-A Lees-Bradner, max. swing 14".
Hammer, 90 lb. Justice.

Hammer, No. 2-A High Speed.
Pipe machine, 16" Bignal & Keeler.
Post hammer, Pettingel.
Punch, No. 5 Long & Allst., 5" thrt.
Punch, No. 7 Long & Allst., 4" thrt.
Riveter, model A Schuster.
Screw machine, No. 6 Woods.
Screw machine, 3" x 36" Jones & L.
Screw machine, 24" Gridley automatic, 4-spindle.
Tapping machines, automatic No. 1 Garvin, (2).
Tilted turret lathes, Nos. 2, 3 and 4 Wood.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, • 111 Broadway, New York
Located at our various factories

NOTE—All Motor-Driven Machines are for 220 volts, direct current.

PLANERS.

30" x 30" x 6' Pond, 2 heads.	42" x 42" x 26' Pond, 4 heads, rev. mtr.
30" x 30" x 8' Pond, 2 hds., rev. motor.	48" x 48" x 16' Pond, 4 heads, rev. mtr.
30" x 30" x 12' Pond, 2 lids., rev. motor.	50" x 16" x 22' Pond, 4 heads, rev. mtr.
32" x 32" x 10' Niles, 2 heads.	52" x 36" x 10' Pond, 4 heads, rev. mtr.
36" x 36" x 10' Niles, 4 heads.	54" x 54" x 22' Pond, 4 heads, rev. mtr.
36" x 36" x 12' Pond, 4 heads, rev. mtr.	60" x 60" x 20' Niles, 3 heads.
36" x 36" x 16' Pond, 4 heads, rev. mtr.	60" x 60" x 24' Niles, 4 heads.
38" x 38" x 10' Niles, 2 heads.	120" x 120" x 36' Betts, 4 heads, motor drive thru belts.
42" x 42" x 12' Niles, 4 heads.	
42" x 42" x 14' Pond, 3 heads.	

DRILLING MACHINES.

3 1/2' Morris radial.	6' Niles univ. radial, motor driven.
5' Niles radial, motor driven.	6' Niles semi-univ. radial, mtr. driv.
6' Pond radial, motor driven.	8' Pond radial, motor driven.

LATHES

16" x 8' and 18" x 8' Morris.	36" x 12' Pond, triple grd., motor dr.
18" x 10" Morris.	36" x 17' Pond, triple grd., motor dr.
21" x 8' LeBlond, motor drive.	42" Pond forge lathe, motor driven.
22" x 10" & 22" x 12' Morris.	60" x 26" Niles, cone head.
25" x 10" LeBlond, motor drive.	72" x 21' Pond, motor drive.
26" x 10" Pond, motor drive.	8" x 44" Pratt & W. turret lathe.
26" x 36" Pond, qk. ch., dbl. bk. grd.	1" x 15" Pratt & W. turret lathe.
30" x 14" Pond, quick change.	24" x 26" Pratt & W. turret lathe.
30" x 25" Niles lathe.	3" x 36" Pratt & W. turret lathe.
30" x 23" Pond, qk. ch., motor drive.	28" Pond rigid turret lathe.

SHAPERS AND SLOTTERS.

16" Stockbridge shaper.	15" Bement slotter, motor driven.
26" Worcester crank shaper.	18" Bement slotter, motor driven.

MILLING

No. 3 Brown & Sharpe plain, motor driven.	MACHINES.
No. 3 universal.	Size C Becker vertical.
No. 5 Brown & Sharpe plain.	No. 5 Brown & Sharpe vertical.
48" x 48" x 14' Bement slab miller, motor driven.	6" x 48" Pratt & W. thread miller.
	6" x 80" Pratt & W. thread miller.
	6" x 132" Pratt & W. thread miller.

GEAR CUTTERS.

5-A Lees-Bradner gear hobbing machine.	No. 4 Brown & Sharpe spur.
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VERTICAL BORING MACHINES.

18" Niles side hd. mill, motor dr.	10' Niles boring & turn'g mill, m. d.
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HORIZONTAL BORING MACHINES.

40" Morris, horizontal boring and drilling machine, 2" bar.	
66" Bement horizontal boring and drilling machine, 4" bar.	
80" Bement horizontal boring and drilling machine, 5" bar, motor driven.	
60" Bement duplex control boring machine, 4" bar, motor driven.	
Pond floor drill, 3" bar.	
Niles boring, drilling and milling machine, 5" bar, motor driven.	

MISCELLANEOUS.

Pipe machine, 2" Cox, motor driven.	Punch, No. 2 L. & A. 48" thr., 1" in 1".
Punch, No. 3 L. & A. horiz., 1" in 1".	No. D. L. & A. dble. 36" thr., 3" in 1".

CRANES AND HOISTS.

Electric Traveling Cranes, 220 Volts, Direct Current.
 3-ton crane, 20' 24" span.

MOTORS.

We have a large stock of new motors from 1 h. p. to 50 h. p., which are of the variable speed type, 220 volts, d. c., which we offer at attractive prices.

SECOND-HAND MACHINERY

FOR SALE BY

McDonald Machinery Co.,	1531-33 N. Broadway, St. Louis, Mo.
Bolt threader, No. 734 Little Giant.	
Clock, electric time system.	
Demagnetizer, Walker.	
Drills, Leland-Giff'd 2-3 sp., h.s., b.b.	
Drills, 20", 24", 34" b.g., & tapping.	
Drill, Rockford horiz, boring & drill.	
Furnace, Holcroft 92 k.w. annealing.	
Hack saw, 4x4, 6x6 & 8x8 h.s.	
Lathes, Davis 22"x10', Bridgeford	
27x9, Walcott 18x8, q.c.	
Milling mch., Kempsmith Nos. 1 & 2; LeBlond No. 4 heavy plain;	
Ohio No. 20 pl.; 1 Knight vert. mill & drill; Becker "SD" vert., rotary	
table, 17200 lbs.; Cin'ti No. 3 plain.	
Planers, Sellers 36"x36"x23', 2 heads;	
Pond 42"x42"x16", 2 heads.	
Punch presses, R. & K. No. 3A inclin., 3" stroke; Swaine No. 40, arch; Bliss No. 24, double crank.	
Punches, Felber 1" in 1", and Slit shear; Scully, 20" throat, 1" in 1".	
Saw, Nutter Barnes 6" cold.	
Shapers, 26" open side planing; 15" & 16" Smith & Mills; 15" Kelly; 16" Cincinnati; 16" Milwaukee; 7" Rhodes; 24" Walcott.	
Shears, 60" thrt. rotary slitting, (2).	
Welders, 20 k.w. spot, Toledo, (2).	
Weiders, butt, Federal, 8" rds.	

FOR SALE BY

The Washburn Company.

Air compressor, 10x8 Ingersoll, serial No. 13931, with 36x72 tank.	\$300.
Blower, Garden City, 18" fan, brand new.	40.
Converter, d. c. & a. c., 10 k. v. a., 220 volt.	75.
Cyanide furnace, Gilbert & Barker E-6.	60.
Drill presses, 2-sp. bench (2) ea.	25.
Drill press, upright.	25.
Emery wh. stand, 4", 2-spd. cone.	25.
Feed water heater, boiler.	50.
Grinder, No. 1 Besly disc.	35.
Generator, Kester Electric, 5-10 volts, 1,000 amp., d. c.	175.
Hack saw, power.	20.
Hammers, 100 lb. poppet rope (2), each	100.

6126 S. LaSalle St., Chicago, Ill.

Lathe, speed.	\$ 20.
Miller, No. 8 Kempsmith.	225.
Miller, B. & S., Lincoln type.	100.
Plating barrel, 24" Hanson & Van W., center anode type.	100.
Polishing machines, Hanson & Van W., with c. s., each.	15.
Press, foot.	10.
Shaper, 16" Gould & Eberhardt.	175.
Shear, alligator, opening of jaws 18", length of jaws 34"	75.
Swaging mch., No. 2 Goodyear.	100.
Swaging machine, Dayton type, jaws 10x11/16.	60.
Time clock, Day time register.	75.
Turret lathe, small size.	40.
Turret lathe, Garvin, 12" swing.	50.
Turret lathe, b. g., p. f.	100.
Turret lathe, W. & S. No. 4.	150.

FOR SALE BY

The H. A. Smith Machinery Co.

Automatic, No. 53 National Acme 4-spindle.	
Automatic No. 55 National Acme 4-spindle.	
Automatic screw machines, No. 2 Brown & Sharpe, (3).	
Automatic screw machine, No. 0 Brown & Sharpe.	
Boring mill, 42" Gisholt, motor driven.	
Boring mill, 36" Gisholt.	
Chuckling lathe, Jones & Lamson automatic.	
Chuckling lathe, 12x6 Hartness automatic.	
Gear shaper, Fellows No. 62.	
Grinder, 6x32 Brown & Sharpe plain.	
Grinder, 10x72 Landis, plain.	
Grinder, 16x52 Landis, plain.	
Grinder, No. 11 Brown & Sharpe plain.	
Miller, Brown & Sharpe No. 13-B plain.	
Miller, Brown & Sharpe No. 3 vertical.	
Planer, 72"x54"x24" Pond, 4 heads.	
Planer, 36"x36"x24" Pond, 4 heads.	
Radial, 4' Hammond sensitive, with tapping attachment.	
Radial, 5' Fosdick full universal.	
Turret lathes, 21" Gisholt, (3).	

Syracuse, N. Y.

SECOND-HAND MACHINERY

FOR SALE BY

Marr-Galbreath Machinery Co.,

Angle & bar bender, No. 9 Buffalo.
 Bender & straightener, No. 4 H. & J.
 Blowers, No. 3 Star., pressure.
 Blowers, pos. pressure, 5" outlet.
 Bolt cutter, single, $\frac{1}{2}$ " Foote-Burt,
 Landis head.
 Bolt cutter, 1 $\frac{1}{2}$ " Acme, triple head.
 Boring mills, Rockford, 2" & 3" bar.
 Boring mill, 36" Bullard, side head.
 Boring mill, vertical, 72" Beets.
 Boring mills, 51" Niles; 10'-16' Niles.
 Boring mill, vertical 84", 2 heads.
 Boring mill, 42" D. & H., 2 heads.
 Boring mill, 12' Pond, 2 heads.
 Brake or press, 10' Robinson, toggle.
 Bulldozers, Nos. 4 & 27 W.-W.
 Bulldozers, Nos. 7 & 8 Ajax.
 Compressor, 8"x8" Ingersoll-Rand.
 Compressor, 1500 cu. ft., I.R., steam.
 Comp'r, 2500 cu. ft. L. D. G., a. c. mtr.
 Compressor, steam, 864 cu. ft., Bury.
 Compressor, 1300, 888, 599 cu. ft., m.d.
 Crane, 40-ton Morgan, 67' span, 4
 motors, 330 volts, d. c., new.
 Crane, 15-ton, 60' span, 3 motors.
 Drill, radial, 6' Baush. m. d.
 Drill, radial, 5' Prentice, t. a., m. d.
 Drill, rad'1/4" Western h. d. g. m. d.
 Drill, radial, 4' American, gear box.
 Drill, heavy gang, 4-sp., 12' table.
 Drills, 36" Hoefer, 24" Aurora, s. h.
 Drill, 12" Washburn sensitive.
 Drill, 30" Barnes, sliding hd., b. g.
 Drill, 22" Aurora upright.
 Exhausters, No. 8 Buffalo.
 Filing machine, Rearwin die filer,
 table 16 $\frac{1}{2}$ " x17 $\frac{1}{2}$ ".
 Forging mch., 14" Acme, steel bed.
 Forging machines, 1 $\frac{1}{2}$, 2 $\frac{1}{2}$ & 3".
 Gear cutter, No. 11 universal Dwight.
 Gear cutter, No. 3 S. & C., auto.1x1".
 Generator, 100 k.w., 240 v. d. c., con-
 nected to horiz. steam engine.
 Generator, 85 k. w., 240 v., d. c., con-
 nected to horiz. steam engine.
 Grinder, No. 60 Heald internal.
 Grinder, Diamond dsl. end, 14" wh.
 Grinder, plain cyl., No. 12 Modern.
 Grinders, No. 1 Cinti univ., c. & t.
 Grinder, disc, No. 10 Besly, 18" wh.
 Grinder, Yankee drill, style A.
 Hack saw, 6x6 Peerless.
 Hack saw, No. 5 Marvel, cap. 6x6".
 Hack saw, No. 7-KC Atkins, 8x8.
 Hammer, 100 lb., single fr., steam.
 Hammers, sgl. fr., 350, 800, 1100, 1500.
 Hammers, st. drop, 2000 lb. Bement.
 Hammers, st. drop, 3000 lb. Ch'bg.
 Hammers, 40, 80, 100 lbs. Bradley.
 Hammer, 125 lb. Bradley upr. strap.
 Ice machine, 1-ton, with motor.
 Lathe, 42"x32" Am., g.d. hd., m. d.
 Lathe, 32"x14", Draper, 28" h. s.
 Lathe, 18"x10" Porter, s. b. g., c. r.
 Lathe, 16"x8" Bradford, pl. change.

58 Water St., Pittsburgh, Pa.

Lathe, 16"x6" Flather, taper att., ch.
 Lathe, 18"x6" South Bend.
 Lathe, 14"x6" Monarch, q. c. g., t. a.
 Lathe, 13"x6" Star, q. c. g., chuck.
 Lathe, 12"x8" Reed-P. g. h., s. p. d
 Lathe, speed, 11"x4" Prentiss, t-rest.
 Miller, bench, No. 1 Burke, hand.
 Miller, No. 32 Fox, hand, 24"x6"x14 $\frac{1}{2}$ ".
 Miller, No. 42 Cin. pl., 18"x6"x15 $\frac{1}{2}$ ".
 Miller, No. 3 LeBlond, pl. ind. hd.
 Miller, No. 2 Kempsmith universal.
 Miller, vertical, No. C4 Becker.
 Miller, Hendey Lincoln No. 2.
 Miller, Knight duplex, tbd. 8 $\frac{1}{2}$ " x32".
 Miller, No. 0 Kempsmith universal.
 Miller, No. 3 Cinc'i, plain 32"x9x20.
 Miller, vertical No. 0 & 1 Bickett.
 Millers, hand, Whitney, (2).
 Motor, 5, 3, 2 h. p., 1 phase, 60 cycle.
 Oil separator, No. 2 Roper, belt.
 Pipe machine, Oster 4", belted.
 Pipe machines, 12", 6" & 2" Jarecki.
 Planer, 120"x120"x36", 4 heads, m. d.
 Planer, 74"x54"x24" Pond, 4 hds.m.d.
 Planer, o. s. 72"x72"x18", 3 hds..m. d.
 Planer, 60x60"x12" Pond, 3 hds., m. d.
 Planer, openside 42"x42"x16", 3 hds.
 Planer, Powell, 42"x42"x16", 4 hds.
 Planer, 42"x36"x20" Cin'ti, 4 heads.
 Planer, 26"x26"x8" Niles, 1 head.
 Planer, 24"x24"x 5' New H. 1hd.
 Press, No. 10 Bliss o. b. i., bench.
 Press, No. 11 Perkins, pl. trim., 4" str.
 Press, No. 82 Consolidated horning.
 Press, No. 16 horning, swing table.
 Presses, No. 21 Bliss; 1 Toledo, o. b. i.
 Punch, No. 124-A Niagara, 15" t., 4 $\frac{1}{2}$ "
 Punch & shear, hand, Schatz, 4 $\frac{1}{2}$ "
 Punch & s., No. 21, & A 30" tht., a. j.
 Punch & shear, 14" & 72" tht., equal
 No. 12 W. W.
 Pyrometer, 32 to 3000 deg. F.
 Riveter, 8" Shuster, style A.
 Riveter, 80-A Grant, cap. 4".
 Riveter, Allen, jaw, 36x20x1 $\frac{1}{2}$ " rivets.
 Rivet hammers, 4-A, 5-A, high spd.
 Rolls, bending, 40"x1", m. d.
 Saw, cold, No. 18 Wagner, 16" saw.
 Saw, cold, No. 11 $\frac{1}{2}$ Higley, 14" saw.
 Shaper, 24" Stockb dge, b. g. c., mod'n.
 Shapers, 14" Steptoe; 24" G. & E.
 Shear, single end, 9" throat, cap. 3 $\frac{1}{2}$ "
 round, motor drive, new.
 Shears, Quickwork No. 6, m. d.
 Shear, rotary, 1" Lennox, 8" gap.
 Straightener, No. 2 Kane & Roach.
 Testing mchs., 100,000, 200,000 lbs.
 Tumbling barrel, Globe, 18"x15".
 Turret lathes, Nos. 1 & 2 W. & S.
 Turret lathe, No. 4 Wood Tilted.
 Turret lathe, No. 1 Bardons & O.
 Turret lathe, Libby 21", motor drive.
 Valve mch., 28" Pottstown, 3-w. m.d.
 Valve tapper, 4" Pottstown, 3-w.m.d
 Valve tapper, 4" Pottstown, 3-spdl.

SECOND-HAND MACHINERY

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Die filer, No. 3 Barry, floor type.
Drill, 16" Leland-Gifford.
Drill, 22" Leland-Gifford.
Grinder, No. 2 Bath universal.
Grinder, 12" Besly, disc comp.
Grinder, No. 1 Diamond, surface.
Lathe, 11"x5' Barnes.
Lathe, No. 3 Ames bench 8"x36".

Lathe, 14"x8' Hendey, q. c. g., taper.
Lathe, 18"x8' Rahn-Larman, q. c.
Lathe, 26"x12' Blaisdell.
Lathe, 16" Dreses universal **Fox**.
Miller, No. 0 Le Blond, plain.
Miller, No. 2-B heavy B. & S. plain.
Planer, 32"x24"x6' Rockford.
Shaper, 12" Smith & Mills crank.

FOR SALE BY

D. C. Oviatt & Co., -

1100 St. Clair Ave., Cleveland, O.
PRESSES.

Bliss Nos. 1½ & 3½B, toggle.
Bliss No. 2 double crank.
Bliss "Stiles" Nos. 3 & 4.
Bliss 68-C & 68-N double action.
Bliss 734, 744, 754 presses.
Consolidated 56, 65, 75, 165.

MISCELLANEOUS.

Automatics, Gridley 1", 1½", 1¾".
Bulldozers, W. & W. 2, 4, 6, 30.
Drills, Colburn D-1, D-2, D-3.
Drill, No. 17 Foote-Burt 4-spindle.
Gear cutter, No. 3 B. & S. 26".
Gear cutter, No. 3 B. & S. 36".
Grinders, disc, Gardner 6 & 7.
Grinder, Pratt & Whitney 14".
Oil separator, No. 2 American.
Rivet hammers, 2-A, 3-A, 4-A & 5A.
Seamer, double, No. 3 Bliss.
Seamer, double, No. 10-S Niagara.

Swain No. 73 s. s. double crank.
Toledo 55½ trimming press.
Toledo 59 & 59½ s. s. presses.
Toledo 93-B double crank, geared.
Toledo No. 666 knuckle joint.
Toledo 24-P, 35-P, 36-P presses.

Seamer, double, No. 6 Niagara.
Shear, alligator, Canton No. 5.
Shear, alligator, Hilles-Jones No. 2.
Shear, Niagara 416-C slitting.
Shear, Toledo 36"x18 ga. power.
Tapper, Garvin No. 2 automatic.
Tumbling barrels, 18"x30"x48".
Turret lathes, W. & S. 4 and 6.
Turret lathe, Libby 18".
Turret lathes, Acme 3½"x36".
Welder, Winfield, 2 pcs. 11 ga. cap.
Wire former, No. 3 Manville.

Over 400 Machine Tools in stock. Send us your inquiries.

FOR SALE BY

McCoy-Brandt Machinery Co.,

Boring mch., 5" bar, Barrett horiz.
Boring mill, 48" Colburn, 2 heads.
Boring mill, 6" bar, Niles horiz.
Boring mill, 10" Niles, 2 heads.
Bulldozers, Nos. 5 & 30 W.-W.
Bulldozer, No. 8 Ajax, 36" str., m. d.
Drills, radial, 5' Prentice, s. p. d.
Forging machines, 2" and 3".
Grinder, 16"x68" Landis crankshaft.
Grinders, 12"x48" Cincinnati plain.
Grinder, Gisholt universal tool.
Grinder, 36" Diamond wet tool.
Grinder, No. 4 Gardner double disc.
Lathe, No. 5 Rivett precision with
turret, etc.
Lathe, 16"x10' L. & S., cone, taper.
Lathe, 19"x14' Le Blond, grd. hd.
Lathe, 24"x26' American, q.c.g., m. d.
Lathe, 27"x18' L. & S., m. d., t. a.
Lathe, 30"x18' L. & S., m. d., t. a.
Lathe, 36"x20' Sidney, q. c. g., cone.
Lathe, 48"x26' Bridgford, m. d.
Millers, horiz., Nos. 2 & 5 Cincinnati.
Miller, vertical, No. 0 Bickett.

210-14 Penn Ave., Pittsburgh, Pa.

Millers, Nos. 2, 5C & 6 Becker vert.
Millers, vertical, No. 3 Brown &
Sharpe, motor drive.
Miller and driller, No. 1 Knight.
Motor, ½ h. p. Wagner, 1-60-110,
1750 r. p. m.
Pipe machines, 12", 10", 8", 4" & 2".
Planer, 30"x30"x8' N. B. P., 1 head.
Punch, multiple, No. 32 W.-W.,
ram 12" 2" long, 350-ton pressure.
Planer, 30"x30"x8' Flather, 1 head.
Punch, 36" Cleveland 1½"x1", m. d.,
arch. jaw.
Punch, 24" Cleveland 1"x1", m. d.,
arch. jaw.
Riveter, 36" reach, 21" gap, 10" cyl.
Rolling mills, 12" bar & 16" reduct.
Rolls, bending, 16"x8" Wickes, m. d.
Shears, guil., cap. 2" and 2" and 1".
Shear, rotary bevel, cap. 1", m. d.
Slotter, 12" Newton, crank, cheap.
Straightener, Abramsen, cap. 4" to
3½" bars, m. d.
Turret lathe, 18" Libby, like new.

SECOND-HAND MACHINERY

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

LATHES

32"x19' New Haven, taper, older style.
 24"-40"x12' Greaves-Klusman, gap.
 24"x10' Lodge & Shipley, grd. hd.
 20"x10' LeBlond heavy duty, q. c. g., taper attachment.
 20"x 8' Monarch, q. c. g., dbl. g.
 18"x 8' Morris, q. c. g., dbl. g., (2).
 18"x 8' Walcott, q. c. g., d. b. g.
 18"x 8' Sidney, q. c. g., d. b. g., (2).
 18"x 8' Hamilton, q. c. g., d. b. g.
 18"x 8' Bradford, q. c. g., d. b. g.

16"x 8' Monarch, q. c. g., sgl. pul. dr.
 16"x 16' & 16"x 8' Pratt & Whitney, taper, draw, collets, relieving att.
 16"x 8' Pratt & Whitney, q. c. g., taper, relieving attachment.
 16"x 6' Walcott, q. c. g.
 16"x 6' Pratt & W., q. c. g., taper.
 15"x 6' Rockford, qk. ch. grd., taper, draw collet attachment.
 15"x 5' South Bend.
 12"x 8' Pratt-W., taper, draw collets.
 Porter-Cable, (2).

MILLERS

24" Bullard vert. rapid production.
 No. 2 Kempsmith universal.
 No. 1 Kempsmith plain.
 No. 1 Brown & Sharpe plain.
 No. 1 Rockford plain.
 Nos. 3, 4 & 5 Becker vertical.
 No. 4 Cincinnati, single pulley.
 No. 5 Defiance horizontal.
 24" Bullard vertical turret.

24" Colburn vertical.
 No. 3 Kempsmith, gr. box fd., plain.
 Cincinnati Lincoln type.
 No. 2 Hendey, gear box feed, plain.
 Nos. 3, 4H, 5, 5A & 5C Becker, vert.
 Gooley & Edlund, production.
 Pratt & Whitney thread miller.
 24" Twin spline miller, P. & W.

DRILL PRESSES

24" Baker Bros. heavy duty, (3).
 24", 26" Aurora, Cincinnati, etc.
 No. 3 Fox multiple, 16-spindle, 1".
 2, 3 spdl. 24" Avey's, 1" cap. (3).

4-spindle Allen, 1".
 Sipp's, with comp. tilting table, (2).
 1, 2, 3, 6 sp. Leland-Gifford, 1" cap.
 Large variety 14", 16", 20" & 24".

GRINDERS

Bryant internal and chucking, (6).
 Nos. 2 & 3 Brown & Sharpe univ.
 No. 13 Brown & Sharpe universal.
 Nos. 1 and 2 Cincinnati universal.
 Cincinnati universal, 4"x57" table.
 No. 1 & No. 2 Norton universal.

No. 2 LeBlond universal.
 10"x36" Norton cylindrical.
 4"x20" Norton cylindrical.
 No. 11 Brown & Sharpe.
 40" disc, Gardner, Bealy.
 No. 65 Heald cylinder.

SCREW MACHINES AND TURRET LATHES.

Jones & Lamson dbl., sgl. spindle.
 No. 2 Warner & Swasey pl. hand.
 No. 2 Brown & Sharpe semi-auto, (2).
 No. 6 Foster, power long. & cross.
 No. 4 Warner & Swasey universal.
 No. 4 Warner & Swasey, screw mch.
 No. 6 Warner & Swasey, turret lathe.

1" & 1½" cap. Acme, b. g., frict. h.
 14" Gisholt, motor drive.
 Nos. 0, 1, 2, 3 Foster, Bard. & Oliv.
 1", 1½", 2" Cleveland auto.
 3½" capacity Acme universal.
 16" & 18" Fox lathes, b. g., fric. hd.
 New Britain auto, chucking mch.

PUNCH PRESSES

No. 3 Black & Johnson (3).
 No. 4 American, solid back.
 10' Niagara square shears, 20 ga.

1" capacity slitting shear.
 No. 3 Overmeyer sprue cutter.

GEAR CUTTERS.

No. 12 Barber-Colman.
 No. 13 Brown & S., bevel & spur.
 Nos. 1 & 1½ Standard auto., (8).

Waltham automatic, (4).
 No. 10 Bilton gear hobbers, (4).
 48" Brown & Sharpe spur.

MISCELLANEOUS.

Bolt cutter, 1" Landis.
 Bolt cutter, 1½" Geometric.
 Bolt cutter, 1" Acme, dbl. spindle.
 Bolt cutter, 1½" Landis, double.
 Bolt cutter, 2-spindle 1½" Landis.
 Bolt cutter, 1½" Acme, double head.

Broaching machines, No. 3B La-
 Pointe (2).
 Corrugating machine, steel, 7"x36".
 Keyseater, No. 1 Becker.
 Keyseater, No. 2 Davis.
 Reducing or straight, rolls, 6"x36".

HOW— Do our advertisers know that your inquiry comes from Hitchcock's Blue Book unless you tell them? When writing them, won't you kindly say that you saw it in Hitchcock's? Thank you.

SECOND-HAND MACHINERY

FOR SALE BY

Brown Machinery Co., - - - 2323 N. 9th St., St. Louis, Mo.

Buffing lathe, Hissey 3 h. p. electric, a. c.	\$ 100.
Buffing lathe, U. S. 3 h. p. electric, a. c.	125.
Drill, Baush No. 3 multiple, cap. 30 spals., rectangular hd. 20x40". Price	1500.
Drill, radial, horizontal, No. 1 Barnes, d. e.	350.
Grinder, cylinder, No. 60 Heald	850.
Grinder, No. 14 Gardner, b. b., disk, dry, 20" disks, good cond. Price	400.
Grinder, No. 6 Besly two-spindle disk, 20" disks. Price	350.
Grinder, one No. 2 Gardner single spindle, double disk, with universal tables; good condition. Price	175.
Grinder, Bath universal,	750.
Grinder, LaSalle automatic surface, good condition. Price	275.
Grinder, No. 1 Brown & Sharpe universal, 10x24; good condition. Price	375.
Grinder, No. 14 Besly single spindle ring wheel. Price	400.
Hammer, size A United, motor driven.	450.
Lathes, 16"x6' Monarch, heavy duty, each.	375.
Lathe, 20"x8' Reed,	300.
Miller, No. 1B Fox, hand & pwr. fd., 18x6x14; new, never used. Price.	400.
Polishers and buffers, drop head, New Britain, each	50.
Press, geared, Stiles & Parker, weight about 9000 lbs.	
Punch & stake riveter, No. 3 Hilles & Jones 60" throat, rapid action; cap. full depth throat $\frac{1}{2}$ " in 7/16"; 16,000 lbs; two stakes. Price	1500.
Shear, Niagara 8', 18 ga., foot power, square, splendid condition. Price	275.
Shear, Marshalltown No. 134 rotary splitting, cap. 4" plate; 4" throat; arranged for motor drive. Like new. Price	750.

Many other bargains. Write for List No. 124.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

Pittsburgh, Pa.

1208 House Building, - - -

Air compressor, Ingersoll, 6x6", b. d.	Press, baling hyd. No. 12-PL Logemann
Air comp., Ing. Rand, 9"x8", 144 c.f.	Press, No. 37½ Bliss, s. s., 3" stroke
Bolt cutters, 18" to 4" Landis.	Punch & shear, No. "A" L. & A., 2" thru 1½".
Boring mill, 62" Bullard, b. d.	Punch & s., Pels, type RBLUEF-26.
Boring mill, 84" Hickford, m.d., new.	Punch & s., No. 3½ H. & J., 1½ thru 1¾".
Boring mill, 120" Niles, b. d.	Punch, hor., Cleveland, 1" thru 1".
Die sinker, No. 3 Pratt & Whitney.	Punch, multiple, No. 3 Hilles & J., 120" between housings.
Drill, radial, 4' Mueller, m. d.	Riveter, Hanna, 70-ton, 18" reach.
Gear cutter, No. 18 Brown & Sharpe.	Riveter, Hanna 30-ton, 75" reach.
Gear planer, 24" Gleason, bevel.	Rolls, angle bending, 4"x1"x8".
Grinder, 16"x48" Landis, crankshaft.	Rolls, plate bending, 10"x1" Bertsch, motor drive.
Grinder, 16"x52" Landis, plain.	Rolls, plate bending, 16"x4" Cleveland, m. d.
Hammer, 200 lb. Bradley upright.	Sand blast, MacLeod, 36"x6".
Hammer, 100 lb. Mayer.	Shaper, 24" Cincinnati, b. g., m. d.
Hammers, 2-B-3, 4-B & 4-N Naze.	Shaper, 24" Stockbridge, b. g., b. d.
Lathe, 18"x8' LeBlond, q. c. g., b. d.	Shear, alligator, Carlin, cap. 14" sq.
Lathe, 36"x16' American, q. c. g., b. d.	Shear, alligator, No. 3 Canton, 2" square, m. d.
Lathe, 36"x18' American, q. c. g., b. d.	Shear, angle, L. & A., cap. 8"x8"x1½".
Lathe, 52"x34" Pittsburgh, 2 car., m. d.	Shear, guil., No. 3 H. & J., cap. 2½" sq.
Lathe, turret, 5"x30" Bardsen & O.	Shear, plate, No. 4 H. & J., 56"x1" cap.
Miller, No. 3-A Garvin plain.	Shear, Toledo, 10"x3/16" cap., m. d.
Miller, No. 4 Cincinnati pl., s. p. d.	Shear, Toledo, 12x3/16" cap., m. d.
Miller, univ., Oesterlein, 25x7½"x10".	Straightening roll, 9-roll, rolls 3x2".
Miller, Ingersoll slab 36"x36"x18".	Testing machine, 100,000 lbs. Riehle.
Pipe mch., No. 1-B Williams, 6" to 2"	Upsetter, 2½" Ajax, steel bed, b. d.
Pipe machine, 12" Jarecki, b. d.	Welder, No. 20-A Thompson, butt.
Planer, 36"x36"x24" Pond, 4 hds., b. d.	
Planer, 48"x48"x14" Gray, 3 hds., b. d.	
Planer, 96"x96"x20" Pond, 4 hds., m. d.	
Planer, 120"x90"x27" Detrick & H.	
Planer, o. s., Cleveland, 36"x36"x16".	
Planer, o. s., Cleveland, 48"x48"x20".	

SECOND-HAND MACHINERY

FOR SALE BY

The Whitman & Barnes Mfg. Co., 114 E. Buchtel Ave., Akron, Ohio

Air hoist, special Curtis, with pendant and two geared trolleys.....	\$ 100.
Blower, P. H. & F. M. Roots Co. No. 2 rotary power.....	34.
Blowers, No. 3 American Gas Furnace Co., positive pressure, (2), each	100.
Blower, No. 5 American Gas Furnace Co., high pressure.....	175.
Centering machine, special, cap. of chuck 4".....	100.
Compressor, Nash Hytor, size 6, 4465 lbs. test, 360 r. p. m.....	900.
Cut-off machines, Warner & Swasey special iron frame lathe type, worm geared cross feed, (2), each.....	75.
Cut-off and pointing lathe, W. & S. 8" x 36", 3-step cone dr. special chuck	25.
Drilling machine, turret, Whitman & Barnes special 12" x 4" lathe type, 6-hole hand operated turret.....	30.
Exhauster, N. 4 B. F. Sturtevant vertical discharge "Monogram,".....	15.
Exhauster, No. 6 B. F. Sturtevant vertical discharge "Monogram".....	20.
Facing machine, Whitman & Barnes special late type, hand cr. ss feed	35.
Filing machine, 12" x 60" Whitman & Barnes special, foot control chuck	15.
Furnaces, double pot lead treating, Strong, Carlisle & Hammond No. 27, (2), each.....	150.
Gas producers, 300 h. p. Sharp-Bussett, for anthracite coal, complete with scrubber, (3), each.....	1,800.
Grinder, No. 12 Modern Tool Co., Erie, Pa., plain, complete with pump and overhead countershaft drive.....	345.
Grinder, 12" x 30" No. 2 Brown & Sharpe universal, standard counter- shaft and all regular equipment.....	150.
Grinders, 6" x 22" Norton Grinding Co. plain cylindrical, standard over- head drive, oil and dope pump and all regular equipment, (8), each.....	360.
Grinder, tool, Norton Co., bench type, single wheel, takes, 12" diam. by 14" thick wheel.....	20.
Hammer, 40 lb. Bradley cushioned hilt.....	50.
Honing machine, 12" x 5' Reed Co., lathe type.....	20.
Lathes, 16" Whitcomb & Blaisdell special taper turning, 8" swing over carriage by 30" between centers; complete with face plate, counter- shaft; etc., (12), each.....	250.
Lathes, 12" x 4' Fitchburg Machine Works, back geared, plain turning, with rise and fall slide rest, taper turning bed and rod feed, (5), each	30.
Lathes, 12x5' Fitchburg Machine Works, back geared, plain turning —same as item above, (7), each.....	35.
Lathes, 14" x 4' Fitchburg Machine Works, back geared, plain turning —same as item above, (2), each.....	30.
Lathes, 14" x 5' Fitchburg Machine Works, back geared, plain turning —same as item above, (9), each.....	35.
Lathes, 12" x 5' Fitchburg Machine Works hand or speed lathes, 4-step cone drive head, (7), each.....	15.
Lathe, 12" x 5' Fitchburg Machine Works hand or speed lathe, 4-step cone drive head.....	15.
Lathes, 12" x 4' F. E. Reed hand or sped. lathes, 4-step cone dr. hd., (3) ea.	15.
Marking machine, No. 11 Dwight Slate, mf'd. by Noble & Westbrook, Hartford, Conn.....	55.
Milling machines, 34" Briggs (Gooley & Edlund, Inc.) style B high duty horizontal, (3), each.....	450.
Milling machine, No. 4 E. E. Garvin & Co. back geared plain.....	50.
Milling machine, 12" x 6' Whitman & Barnes special lathe type hand miller.....	20.
Pointing lathes, Whitman & Barnes special, (2), each.....	15.
Pointing machine, Warner & Swasey 18" x 5' lathe type, 14" capacity through spindle, hand wheel and slide rest.....	75.
Pump, special single cylinder force pump.....	7.
Spindles for bench grinding mches., Whitman & Barnes, iron frame (7)	7.
Straightening presses, No. 2 Springfield, bench, (2), each.....	30.
Straightening presses, No. 00 Springfield, bench, (4), each.....	15.
Tempering furnace, No. 1-E-2015 Eaton electric, rotary, with 7" x 10" drum, automatic temperature control switchboard, 440 volts, 60 cycle, all regular equipment.....	100.
Upsetting and forging machine, 14" Ajax Mfg. Co. universal, serial No. 2558.....	2,000.

SECOND-HAND MACHINERY

FOR SALE BY

M. A. Wertman,

Blue print machine, 42" Peas auto.
Drill, 24" Aurora, m. d., tapping att.
Drill, No. 315 Baker heavy service.
Drill, 5-spindle Detroit automatic.
Grinder, 24" Ingersoll cutter.
Grinder, No. 3 Ohio univ. & tool.

505 Superior Bldg., Cleveland, Ohio

Milling mch., No. 24 Rockford pl.
Milling mch., No. 2 Kempsmith pl.
Shaper, 28" Ohio heavy duty.
Planer, 24"x6" Gray, 1 head.
Screw machine, No. 4 Foster.

FOR SALE BY

Rosenfeld Machinery Co.,

Chain hoists, 1/2 to 12 tons, Yale & Towne and Ford triplex.
Drill presses, all sizes.
Milling machine, vertical, Becker model C. S.
Millers, hand, Van Norman No. 1.

942 W. Lake St., Chicago, Ill.

Motors, a. c., all sizes, 3 ph., 60 cy.
Motors, a. c., 3 ph., 25 cy., 7½ to 50 h.p.
Radial drill, 2" American.
Tumbling barrels, 2 compartments, 6"x15" each, for small work.

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

14"x6' LeBlond, l. c. g. and chuck.
14"x6' Hamilton.
14"x8' Monarch, c. r., stand. pattern.
16"x6' South Bend, c. r., complete.
16"x8' Lodge & Shipley, old style,
c. r., l. c. g.
18"x8' Prentiss c. r., l. c. g., chuck.

TURRET LATHES AND

No. 2-A W. & S. g. h. tur. lathes.
No. 3-A W. & S. g. h. turret lathe.
26" Gisholt heavy duty turret lathe.
2"x24" Jones & L. g. h. flat turret.
No. 00 Brown & Sharpe auto., (6).
No. 0 Brown & Sharpe auto. (2).
No. 2 Brown & Sharpe auto. (2).

DRILLING

22" Cincinnati, sliding head, friction back geared, power feed.
24" W. F. & J. Barnes, sliding head, back geared and power feed.
6' arm Western radial, with tap. att., arranged for motor drive.

MILLING

No. 0 Bickett, hand, bench type (3).
Toledo hand milling machines (2).

GRINDERS.

No. 10 B. & S. plain, (2).
No. 6-A Bryant internal.
LaSalle combination pl. and surface.
No. 1 LeBlond cutter grinder.

SHAPERS AND PLANERS.

16" Hendey friction, (2).

METAL CUTTING TOOLS AND SQUARING SHEARS.

Higley cold saw.

GEAR CUTTERS AND HOBBERS.

26" & 36" No. 3 Brown & S. auto.
No. 18 G. & E. vert., for spur & spiral.
No. 3 Barber-Colman.

22"x22"x5' Putnam planers (2).

3" new Davis cutting-off machine.

HAMMER.

Quickwork body hammer.

SECOND-HAND MACHINERY

FOR SALE BY

Surplus Material & Machinery Co., 8735 Kercheval, Detroit, Mich.

Bar shear, 2 $\frac{1}{2}$ " capacity.
Blue print outfit, Wagenhorst.
Grinder, 12-42 Landis.

Hand screw machine, No. 4 W. & S.
Turret lathe, 24 Davis.
Turret lathe, 20 Milholland.

FOR SALE BY

A. F. Strafer.

BORING MILLS, VERTICAL AND HORIZONTAL.

12" Betts, geared feed, belt drive.
24" Bullard, v. t. l., New Era type.
36" Bullard, side head, v. t. l.
72" Niles-B.-P., heavy duty, m. d.
72" Bullard, a. c. motor drive.
12" Betts, heavy modern, m. d.

DRILLS, UPRIGHT

6" Mueller plain, d. c. motor drive.
7 $\frac{1}{2}$ " & 5" Baush, belt drive.
6" Cincinnati Bickford, full univ.
D-3 Colburn heavy duty, s. p. d.

GRINDERS

No. 60 Heald cylinder, low price.
6" x 32" Norton plain.
10" x 36" Norton plain.
10" x 24" Landis plain, self contained.

GEAR CUTTERS.

36" x 16" Newark, heavy duty.
24" x 8" G. & E., vertical type.

LATHES

50" x 36" Bement-Miles, t. g.
50" x 16" Fifield, belt drive.
50" x 30" Pittsburgh, h. d., q. c.
44" x 21" Niles-Bement-Pond, t. g.

TURRET LATHES.

3 $\frac{1}{2}$ " x 36" Acme, flat, modern, geared head, chuck equipment.
18" Libbey, s. p. d., rapid traverse.
24" Gisholt, motor drive.
28" Gisholt, fine condition.
24" x 26" J. & L., bar equipment.

MILLING MACHINES.

No. 4 Cincinnati plain, cone type.
No. 3 Kempsmith univ., cone.
No. 2 Brown & Sharpe plain.
No. 3 Brown & Sharpe plain, cone.

PLANERS.

12" x 28 $\frac{1}{4}$ h., belt drive (stone).
30" x 8" D. & H. open side, 2 heads.
24" x 24" x 12" American, 2 heads.

PUNCHES AND

No. 6 Hilles & Jones, 42" throat.
No. 4 Hilles & Jones, double, 48" throat, motor drive.
No. 6 Quickwork, 1" capacity.
No. 10 Quickwork, 60" t., cap. 14 ga.

MISCELLANEOUS.

Bending rolls, 4" x 20' Hilles & Jones.
Bending rolls, 4" x 7' Wm. Sellers.
Bending rolls, 4" x 10' 6" Southworth.
Bolt cutter, Landis, 1 $\frac{1}{2}$ ", double.
Broaching machine, Nos. 2 & 3 La Pointe.
Crane, 90-ton, 86' spar, P. & H., d.c.
Drill chucks, 1" capacity, new.

30 Church St., New York City

30" King, single turret head.

42" Bullard, 2 h., rapid traverse.

54" Bullard, rapid traverse.

Bement-M. horiz., 6" bar, floor type.

Beaman-S. horiz., 6" bar, floor type.

3 $\frac{1}{2}$ " bar, Lucas type, horizontal.

DRILLS, UPRIGHT AND RADIAL.

310 Baker, 2 $\frac{1}{2}$ capacity, s. p. d.
6-spindle, 20", Barnes.
26" Reed-Prentice, motor drive.
28" Mechanics upright, like new.

GRINDERS

10" x 24" Landis universal.

3" x 18" Norton plain.

No. 11 Brown & Sharpe, 6" x 32".

No. 3 B. & S. tool cutter.

GEAR CUTTERS.

24" Bilton automatic.

60" x 11" Brown & Sharpe No. 5.

LATHES

60" x 16' New Haven, t. g.

24" x 10' R. K. LeBlond, taper att.

21" x 10' LeBlond, heavy duty.

27" x 10' LeBlond, turret on shear.

TURRET LATHES.

3 $\frac{1}{2}$ " x 36" Jones & Lamson, bar equipment, high serial.

24" x 26" Greenlee, like new, cheap.

No. 6 Brown & Sharpe.

14" x 8" American q. c. engine lathes, turret on shear.

MACHINES.

13-B Brown & Sharpe, mfg. type.

No. 5-B Becker, rotary table.

No. 3 Cincinnati vert., high power.

U. S. Mfg. Co. hand miller.

PLANERS.

54" x 16' Wm. Sellers, 4 heads, b. d.

36" x 36" x 12" Gray type, 2 heads.

24" x 24" x 6" Gray, 1 head.

SHREWS.

Pells triple combination, cap. 1 $\frac{1}{2}$ ".

25-U Buffalo combination.

Angle shear, Covington, 6x6x $\frac{1}{2}$.

Angle shear, 8" x 8" armor plate.

Lennon rotary, 44" throat, 1" cap.

MISCELLANEOUS.

Fire pump, 1000 gal. Knowles, stm.

Flanging clamp, 96".

Forging mch., Ajax 1 $\frac{1}{2}$ " steel bed.

Hammer, 9" McDougal & Potter.

Hammer, No. 4, type "I", Nazel.

Slotter, N. B. P., 18", modern mtr. dr.

Surface plates, B. & S. 12" x 18".

Tapping attach., Errington 1" cap.

SECOND-HAND MACHINERY

FOR SALE BY

Hoosier Universal Machinery Co.

Centering machine, Whiton 2-spdl. Drills, Minster No. 1D heavy duty. Flat turret, 3" x 38" J. & L., 2-sp., new. Gear cutter, Cincinnati, spur. Gear hobber, Gould & Eberhardt. Grinder, Landis No. 1 universal. Horizontal boring, drilling and milling machine, Cleveland No. 1. Planer, 24" x 24" x 14' Chandler No. 10, single head.

Goshen, Ind.

Radial drill, 3' Am. Tool Works. Saw, metal, 13" x 16" Peerless, motor drive. Screw machine, Defiance No. 4, new. Tooth rounding mch., Schuchardt & Schutte. Turret lathes, J. & L. 2 3/16" x 36". Bar and chucking. Turret lathe, P. & W., 12" x 14" swing. Turret lathe, 24" x 8' bed.

FOR SALE BY

B. L. Saltzman,

524-526 W. Van Buren St., Chicago, Ill.

LATHES.

15" x 6' Shepard, new, sgl. p., full g.h. 18" x 10' American. 26" x 12' Walcott. 12" x 5' Vernon, with taper att.

MISCELLANEOUS.

Band saw, 32", Crescent. Beading & wiring machines, Yoder. Bolt theader, Wells, double head. Drill presses, 1, 2 & 3 spdl. Allen 14". Drill press, 21" Champion, b. g. new. Drill press, 20' plain, Factory transmission.

Pratt & Whitney turret lathe, 1". No. 22 Garvin screw machine. No. 1, No. 2, No. 3 and No. 4 Wood turret lathes.

Gap shear, 36" power, Niagara. Gear generators, Gleason. Hack saw, power, 6x6 Racine. Punch & shear, Niagara, 8" cap. Screw press, Newell, 7" throw. Shaper, Rockford 24". Steel brake 8', 16 gauge.

FOR SALE BY

The O'Brien Machinery Co.

Boring machine, 36" Bullard, turret head, vertical. Boring mill, 72" Bullard vertical, 2 heads, motor drive. Die sinker, No. 2 Pratt & Whitney. Drill, 32" Aurora, motor driven, tapping attachment. Drill press, D-I Colburn heavy duty. Grinders, foundry, Norton heavy duty, (2). Hammer, 1000 lbs. Billings & Spencer board drop. Lathe, 22" x 11" Lehmann, geared head, taper attachment. Lathe, 24" x 12" Schumacher & Boye. Lathe, 36" x 18" American, cone head, taper attachment. Lathe, 26" x 44" with 24' bed McCabe double spindle. Lathes, extension bed gap, 25" - 45" x 14' Harrington, motor driven. Millers, Gould & Eberhardt continuous, (2). Milling machine, No. 3H LeBlond univ., with vert. and slotting atts. Milling machine, Newton combination circular milling machine and saw for structural work. Planer, 36" x 16' Cleveland open-side, 2 heads.

113 N. Third St., Philadelphia, Pa.

Planer, 30" x 30" x 10' Whitcomb, 1 hd. Pipe machines, 2", 4", 6", 8" & 12" Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock. Planer, 36" x 36" x 12" Woodward & Powell, motor driven, 3 heads. Planer, 36" x 36" x 24", Bement, 4 hds. Press, No. 54 Toledo gr. str. side. Press, No. 73½ Bliss trimming press, with side shear. Presses, Nos. 18, 19 and 20 Bliss. Punch and shear, No. 3 Hilles & J., dbl. end, motor dr.; punch end, 42" thrt., cap. 1½" thru 1"; shearing end, 36" thrt., cap. 1" plate, 2½" round, 7" x 1½" flat, 5" x 5" x 8" angle. Punch and shear, Pels combination; punching cap. 1" thick; shearing, 2" rd., 2½" squares, 6x6x8" angles. Radial drill, 5' Pond, motor driven. Shaper, 24" Gould & Eberhardt, b.g. Shapers, 12", 14", 16", 21" and 24" stroke, assorted makes. Shaper, 3 Bement - Miles massive heavy duty, traveling head. Turret lathe, flat, 3" x 36" Jones & L. Turret lathe, No. 6½ Hardons & Oliver, 24" w. f. cap., cabinet base.

SECOND-HAND MACHINERY

FOR SALE BY

Mrs. Jocie Wills,

CLEVELAND AUTOMATIC.

Box 44, Dover, Ohio

Cleveland Automatic, model A, 14", brand new, never turned a wheel. Will sell for less than half of original cost to close an estate.

FOR SALE BY

Reliance Machinery Sales Company

Brighton Road at Pennsylvania Ave.,

Pittsburgh, Pa.

Boring mill, 30" Bullard, 1 head.
Boring mill, 34" Colburn, 1 head.
Boring mill, 42" Bullard, 2 heads.
Boring mill, 54" Bullard Maxi., m.d.
Boring mill, 72" Betts, 2 heads.
Brake, 60" D. & K., 14 gauge.
Broach, Nos. 3 & 4 LaPointe (Hudson)
Buffer, 2 h.p. U. S. Elec., 220-3-60.
Bulldozer, No. 5 Williams & White.
Chamfering machine, Warner & S.
Die slotter, 34" stroke, Garvin.
Drill, 14" Leland-G. 6-spdl., m. d.
Drill, 13" Fosdick 6-spdl. m. d.
Drill, 16" Fosdick, 6-spdl., m. d.
Drill, No. 4 Foote-Burt 4 spindle.
Drill, Reed, 4-spindle, cap. 1".
Drill, Baush, 8-spindle, No. 3 taper.
Drill, No. 30 Natco, 12-sp., No. 3 tap'r.
Drill, No. 13 Natco, 16-sp., No. 3 tap'r.
Drill, 20" Barnes, camel back.
Drill, 21" Cincinnati, sliding head.
Drill, 24" Hoefer, sliding head.
Drill, 26" Barnes camel back.
Drill, 36" Snyder, sliding head.
Drill, No. 310 Baker heavy duty.
Drill, Model F Turner auto. turret.
Drills, 20" & 24" Foote-Burt, h. d.
Gear cutter, 36"x10"G. & E., s. p. d.
Grinder, type RA U. S. Electric.
Grinder, type KKA U. S. Electric.
Grinder, 20" Besly disc, m. d.,
220-3-60.
Grinder, Oliver drill, m. d., cap. 1".
Grinder, No. 70 Head internal.
Grinder, No. 5 Bridgeport wet tool.
Grinder, No. 3 Brown & S. univ.
Grinder, 6"x32" Norton plain.
Grinder, 12"x30" Modern plain.
Hack saw, 6"x6" Peerless, belt dr.
Hammer, High Speed, cap. 1/16".
Hammer, 80 lb. Bradley cush. helve.
Hammer, No. 4 Beaupry, mtr. dr.
Lathe, 12"x 6" Seneca Falls.
Lathe, 12"x10" Davis tool r'm, q.c.g.
Lathe, 14"x 6" Seneca Falls, q. c. g.
Lathe, 14"x 6" Hendey, tie bar.
Lathe, 14"x 8" Whitcomb-Blaidsell.
Lathe, 17"x8" Sidney, hvy. duty, q.c.g.
Lathe, 18"x8" L. & S., q. c. g., m. d.
Lathe, 18"x8" Rahn & Larmon, q.c.g.
Lathe, 18x10" Reed, q. c. g., d. b. g.
Lathe, 22"x10'6" Putnam, hvy. duty.
Lathe, 26"x12" Bridgeford hvy. duty.
Lathe, 27"x26" Schumacher-B., q.c.g.
Lathe, 30"x12" Johnson, triple grd.

Lathe, 30"x16" New Haven, q. c. g.
Lathe, 33"x12" Pond, triple geared.
Lathe, 34"x12" LeBlond, triple grd.
Lathe, 38"x50" New Haven, dbl. hd.
Lathe, 42"x31" Pond, triple geared.
Miller, No. 1 U. S. hd., complete.
Miller, No. 2 Cincinnati h. p. vert.
Miller, No. 2 Cincinnati plain, v. a.
Miller, No. 3 Hendey plain.
Millers, models B & C Becker, vert.
Millers, Sellers, Lincoln type, (2).
Millers, No. 25 Becker plain, (3).
Pinion rougher, 36 BM Gould & E.
Pipe machine, B. & K., 4" to 2", m. d.
Pipe machine, Merrill, 14" to 6".
Pipe machine, 8" Cox, cap. 24" to 8".
Pipe machine, Merrill, 24" to 12".
Pipe machine, 12" Cox, cap. 6" to 12".
Pipe machine, 16" Cox, cap. 8" to 16".
Planer, 24"x24"x 6" Gray, 1 hd.
Planer, 36"x36"x8" Cincinnati, 1 hd.
Planer, 36"x36"x8" Cleveland overside
Planer, 36"x36"x10" Pond, rev. m. d.
Planer, 60"x60"x16" Betts, 3 heads.
Planer, 72"x72"x18" Detrick & Harvey open side, m. d.
Press, No. 10 Bliss, reducing, 4" str.
Press, No. 23 Stoll, horning.
Presses, Nos. 61 & 62 Bliss, o.b.f. w.
Press, No. 87 Niagara screw press.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 65 Consolidated, 5" str.
Press, No. 168 Toledo toggle.
Press, No. 305 Bliss straight sided.
Press, 5-A & 13-A Bliss, toggles.
Punch, Reade s. e. 4"x4", arch. jaw.
Punch, Wickes, 48" thrt, cap. 14"x1".
Radial drill, 2' 6" Carlton high spd.
Radial drills, 4' & 5' Prentice plain.
Reduction gear, Foote, 50 to 1.
Sand blast, Pangborn type EA.
Saw, Williamson metal band.
Saws, American metal sw., m. d., (2).
Screw machine, Nos. 1 & 2 Warner & Swasey, plain head.
Screw machines, No. 4 Warner & Swasey, g. f. h., power feed, (3).
Shaper, 20" Cincinnati b. g. crank.
Shaper, 24" Cincinnati b. g. crank.
Shear, No. 2 Quickwork rotary.
Shear, 72" Niagara, 14 gauge.
Shear, squaring, 96" power, 20 ga.
Tapping mch., 2" Baker, type F-4.
Tapping mch., 8" Baker, type K-II.
Tooth rounder, 12" Rochester.

Our warehouse is full of bargains. What have you for sale?

SECOND-HAND MACHINERY

FOR SALE BY

J. E. Haetten & Co., Inc.	50 Church St., New York, N. Y.
Automatics, 8-1/2" Cleveland model B, (40), each.	\$ 100.
Boring mill, 48" Colburn, 2 head, geared feeds.	600.
Boring mill, 10'-16' N. B. P. rapid traverse, 3 motors.	17000.
Cranes, 25-ton N. B. P. 67' span, 4 motors each, like new.	
Drill, 4' Niles semi-universal radial, scarcely used.	1500.
Engraver, E-3 Keller die sinker, motor, like new.	900.
Generator, 200 k. w., Westinghouse Parsons turbo, jet condenser.	1750.
Grinder, 50" Gardner No. 24, with exhaust.	450.
Grinder, 10x36 Norton plain, serial 3500 (9) each.	250.
Grinder, No. 65 Heald auto. cylinder like new (7) each	950.
Grinder, 15x15x10' Norton table type, surface, never used.	1000.
Hammer, 200 lb. Gould & Eberhardt, drop.	250.
Lathe, 50" x 20' Putnam, single back geared, compound rest, good	600.
Miller, 11x40 work surface, Lincoln type, good condition	200.
Miller, 30" x 20" x 16' Ingersoll, 4 heads, A-1.	2000.
Miller, No. 2 Cincinnati universal millers, g. h., with motors.	1600.
Miller, No. 3 LeBlond universal millers, g. h., heavy motors.	2250.
Miller, No. 2 LeBlond plain miller, g. h., heavy motor.	1200.
Miller, No. 4 Pratt & Whitney vertical, g. h., heavy motor.	2500.
Miller, 54" x 20" x 20' Ingersoll, 8 heads, a. c. motor 98%.	6000.
Oil separator, 24" American, belt drive.	100.
Planer, 120" x 80" x 20' Niles, 3 heads, excellent condition.	3000.
Press, 92B Toledo, 36" wide, 34" stroke, geared.	1050.
Testing machine, Brinnell hardness, complete, P. I. & Machine Co.	175.
Turret, 24x26 Cincinnati Acme, many extras.	900.
Turret, 2x26 Pratt & Whitney, bar work, and motors.	850.
Turret, No. 6-A Potter & Johnston, serials 15,700, very good (2), each	500.

FOR SALE BY

Jones Machine Tool Co., 528-532 E. Front St., Cincinnati, O.

LATHES.

16"x 6' LeBlond, q. c. g.	\$ 375.	20"x10' Lodge & Shipley, q. c. g.	\$ 850.
16"x 8' Hendey, q. c. g. & t. a.	975.	30"x12' Houston Stam., q. c. g.	750.
18"x 8' American, q. c. g.	625.	26"x12' Reed, l. c., t. a.	500.

MILLING MACHINES.

No. 1½ Valley City universal.	\$ 500.	No. 3 Cincinnati plain	\$ 950.
No. 1½ Cincinnati universal.	675.	No. 3 LeBlond plain.	900.
No. 2 Hendey universal.	775.	No. 3 B. & S. vert., s. p. drive	1250.

RADIALS AND DRILL PRESSES.

24" American, s. p. drive.	\$ 675.	72" Dreses, motor drive.	\$ 1500.
42" American triple purpose.	1750.	24" Hoefer, sta. head	175.
42" Gang, cone drive.	375.	24" Rockford, sliding head	225.
48" Bickford, cone drive.	475.	30" Cincinnati, sliding hd., t. a.	325.
72" Niles, cone drive.	750.	42" Bickford, stationary head.	225.

PUNCH PRESSES AND SHEARS.

No. 2 Niagara	\$ 140.	No. 4 Verdin, b. g.	\$ 675.
No. 5 Niagara, b. g.	475.	No. 85 Bliss, d. b. g.	1500.
No. 2 Swain horn press.	275.	No. 34 Toledo plain.	550.
No. 6 Whiting, single end.	475.	No. 516A Toledo sq. sh., 16 ga.	275.

PLANERS AND SHAPERS.

24"x 6' Powell 1 head	\$ 600.	16" Smith & Mills shaper	\$ 325.
30"x 6' Gray, 2 heads	850.	25" Smith & Mills, b. g.	875.
30"x12' Gray, 1 head	975.	21" American b. g. shaper	775.
42"x26' Cincinnati, 2 heads	2250.	24" Kelly b. g. shaper	825.

MISCELLANEOUS.

Chain hoists, various sizes, (50)		Hammer, steam, 800 lb. Niles	\$ 800.
Gear cutter, 26" Cinti No. 3.	\$ 350.	Hammer, 100 lb. Bradley	275.
Gear cutter, 45" B. & S. No. 4.	750.	Mill, 36" Bullard vertical	1500.
Gear hobber, 24" S. & S.	550.	Mill, Lucas No. 21 horiz. 24" bar	1500.
Gear hobber, Barber-C. No. 12	1075.	Shaper, 36" Fellows No. 6	200.
Grinder, 10x50 Norton	475.	Slotter, 10" Niles vertical	500.

Write for our latest Stock List.

SECOND-HAND MACHINERY

FOR SALE BY

Little Giant Company,

Drill, radial, 36" Hilbert.
Grinder, No. 2 Landis.
Grinder, No. 75 Heald internal.
Jolt rollover mould. mch., No. 2 U.S.

Direct from the User.

Mankato, Minn.
Miller, No. 6 Whitney, hand.
Planer, 48" x 48" x 16" Gray, Al cond.
Rollover machine, 22" International.
Shaper, 24" Smith & Mills.

FOR SALE BY

Herman L. Winterer,

43" x 17" 44" Bement-Miles.
37" x 14" Johnson d. b. g., q. c. f., t. a.
32" x 12" Pittsburgh, heavy duty, q. c. g.
27" x 12" Bullard.
26" x 11" Wickes, q. c. g.
28" x 10" Niles, q. c. g.
25" x 14" Hendey, q. c. g., taper attachment, oil pan, (2).
24" x 14" Porter.
21 1/2" x 8" LeBlond.

943-53 N. Front St., Philadelphia, Pa.
LATHES.

20" x 8" Walcott, d. b. g., c. g., (2).
20" x 8" Whitcomb Blaisdell, q. c. g.
19" x 10" Draper, patent head.
18" x 8" Davis, q. c., d. b. g.
18" x 7" Chard, d. b. g., semi q. c. g.
18" x 8" to 8' lathes, (6).
16" x 8" Greaves & Klusman, b. g., t. a.
14" x 8" Filsmith, q. c. g.
14-22" x 6" Barnes extension gap.
And many others.

TURRET LATHES.

No. 3 Kempsmith.
14" x 6" Warner & Swasey.
16" x 6" Johnson, back grd.
No. 3 Bardsom & Oliver back grd.
14" x 5" 3" Pratt & Whitney, (2).
No. 3 Foster Kimball.

DRILL PRESSES.

34" Barnes, s. h., geared face, comp. table.
24" Sibley & Ware, sliding head.
4-sp. type C, Taylor & Fenn, pwr. fd.
Drill presses, assorted sizes.

MILLING MACHINES.

No. 3 Hendey-Norton, q. c. g.
No. 5-C Becker vert., rotary table.
No. 1 Milwaukee plain.

PLANERS AND SHAPERS.

16" Potter & Johnston crank shaper.
15" Lodge & Davis shaper.
15" Potter & Johnston shaper.
14" Warren shaper.

MISCELLANEOUS.

Molding machine, 24" Taber, with roll over.
Punch presses, all sizes, (55).
Punch, multiple, No. 5 H. & J., gate pat., 86".
Punch & shear, No. 2 H. & J., dbl. end, 20" th. cap., 14" in 1".
Punch, No. 2 H. & J., 15" th., arch. jaw, 14" in 1".
Punch, single end, 31" th., arch. jaw, cap. 1" in 1".
Punch, horiz., L. V., grd., cap. 1".
Punch & shear, Industrial Wks., d. e., capacity 1" in 1"; shearing 1" x 6".
Riveter, air, 6" gap Allen, cap. 1 1/2".
Slotter, 14" Niles.
Tooth round'g mch., Schuchardt & S.
Large assortment of General Machinery. Send for Complete Price List.

3 1/2" x 28" Pond, triangle.
3 x 36" Pratt & Whitney, hollow hex.
20 x 7" 6" Pratt & Whitney, back grd.
20 x 7" Bridgeport, 28" h. s.
19" x 7" Fay & Scott, back grd.
No. 22 Garvin Monitor.

42" Gang radial, s. p. speed box.
40" Barnes horizontal radials, (2).
36" Bickford radial, circular base, motor driven.
28" Rockford, q. c. g. feed, (2).

MILLING MACHINES.

No. 5 Cincinnati, table 9 1/2" x 50 1/2".
No. 15 Garvin, table 12 x 42".
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.

PLANERS AND SHAPERS.

12" x 10" x 25" Sellers planer, 4 heads.
30" x 30" x 8" Putnam planer.
48" Morton draw-cut shaper.
39" Pedrick & Ayer, open side.
16" Hendey shaper, shifting belt.

MISCELLANEOUS.

Boring mill, car wheel, 60" Newton.
Boring, drilling and milling machine,
17" Bement Niles horizontal.
Boring mill, No. 1 Scillers, horizontal, 2 1/2" bar.
Boring mill, No. 3 Binsse, horizontal, 2 1/2" bar.
Grinder, 13 1/2" x 5" Landis universal.
Grinder, disc, No. 17 Besly.
Hammer, 15 lb. Bradley helve.
Hammer, 28 lb. Little Giant, m. d.
Hammer, 40 lb. Bradley, helve.
Hammer, 60 lb. Hotchkiss.
Hammers, 60 lb. Bellefonte upright; 2
Hammer, 500 lb. Merrill board drop.
Hammer, 750 lb. Merrill board drop.
Keyseater, 18" stroke Morton.

Large assortment of General Machinery.

SECOND-HAND MACHINERY

FOR SALE BY

Syracuse Supply Company. 314 W. Fayette St., Syracuse, N. Y.

Guaranteed New Machines in original crates at prices below list:

Crucible, FD-104 Hoskins.
 Drill, 21" Canedy-Otto (2).
 Drills, 20" Buffalo (4).
 Drills, 36" Aurora sliding head (4).
 Drills, No. 11 Pratt & Whitney
 multiple, 16 spindles.
 Drills, No. 11 Pratt & Whitney
 multiple, 8 spindles.
 Grinders, No. 60 Heald (2).
 Grinders, Diamond wet tool.

Exceptional values in Used Tools:

Cylinder borers, 6-spindle Moline
 adjustable No. 5, 36".
 Drill press, 25" W. F. & John Barnes.
 Drill press, 4-spindle Barr sensitive.
 Drill press, 3-spindle Barr sensitive.
 Drill press, 2-spindle Barr sensitive.
 Lathe, 14" x 6" American.
 Lathe, 14" x 6" Monarch.
 Lathe, 16" x 6" Hendey, rebuilt.
 Lathe, 16" x 8" American, geared
 head, rebuilt.
 Lathe, 16" x 8" Monarch.
 Lathe, 16" x 10" American.
 Lathe, 28" x 12" Draper.
 Miller, No. 3 Becker vertical.
 Miller, No. 2 Brown & S., rebuilt.
 Millers, No. 3H LeBlond plain (2).

Grunder, Churchill internal.
 Lathe, 10" x 5' Monarch.
 Lathe, 14" x 6' Monarch.
 Lathe, 14" x 8' Monarch.
 Lathe, 16" x 6' Monarch.
 Pipe machine, No. 70 Forbes.
 Screw mch's, No. 4 W. & S. g.f.h., (3).
 Straightener, No. 2 1/2 Corey.
 Tilted turret, No. 4 Wood.

Millers, No. 4 LeBlond plain (2).
 Planer, 30" x 30" x 16' L. W. Pond.
 Planer, 60" x 60" x 22' Niles.
 Press, No. 69N Bliss.
 Radial, 5' Pond.
 Radial, 4" Cin'ti-Bickford, GB-BD.
 Thread miller, 10" Lees-Bradner.
 Tilted turret, No. 6 Wood.
 Turret lathes, No. 4 Foster (2).
 Turret lathe, No. 2 Warner & S.,
 hollow hex.
 Turret lathe, 2 1/2 x 26 Pratt & Whitney.
 Turret lathe, No. 2 1/2 s. g. Garvin.
 Turret lathes, 3 x 36 Jones & L. (3).
 Turret lathe, 2 x 24 Jones & Lamson.
 Turret lathe, 21" Gisholt.
 Turret lathe, No. 3 Cincinnati-Acme.

FOR SALE BY

Peninsular Machinery Co. 429-31 E. Jefferson Ave., Detroit, Mich.

LATHES.

13" x 5' Blount speed lathe.
 13" x 5' South Bend, (2).
 13" x 6' Willard, (3).
 13" x 6' Sebastian, (4).
 14" x 6' Carroll-Jamieson.
 14" x 6' Reed, l. c. g., (2).

16" x 8' Bradford, l. c. g.
 17" x 8' LeBlond rapid product'n, m. d.
 21" x 11' LeBlond, all geared, (2).
 21" x 12' LeBlond line bearing.
 26" x 10' LeBlond crankshaft.
 34" x 36" Lo-Swing.

DRILLING MACHINES.

3-spdl. Henry & Wright, h. s., b. b.
 22" Sibley all-geared, p. f.
 28" Barnes, s. h., tapper.

25" Barnes 4-spindle gang.
 No. 3 Baush multiple.

MILLING MACHINES.

Briggs type A, (2).
 No. 32 Kempsmith.

No. 32 Kempsmith plain.
 No. 3H LeBlond plain, cone type.

TURRET SCREW MACHINES.

14" Defiance, f. h.
 2 1/2 x 26 Pratt & Whitney, a. c.

No. 3 Foster f. h. turret lathes, (2).

GRINDERS AND POLISHERS.

No. 50 Heald cylinder.
 20" Blount wet grinders.
 No. 15 Bryant, motor drive.
 No. 26 Besly, double spindle, m. d.

No. 4 Webster & Perks polishing.
 Bennett & O'Connell dbl. sp. pol.
 No. 23-B Valley City disc.

MISCELLANEOUS.

Band saw, 6" Napier.
 Centers, bench, Brown & Sharpe (3).
 Cutting-off mch's, 4" Hurlbut-R., (2).
 Gear cutter, No. 13 B & S., bevel.
 Gear generator, 6" Gleason, bevel.
 Gear generator, 18" Gleason, bevel.
 Gear hobber, No. 4 Farwell auto.

Gear tester, bevel, Gleason.
 Hammer, drop, No. 5 Williams-W.
 Lapping mch's, Bethel-Player, (2).
 Metal cutter, No. 1 Gray.
 Screw slotter, No. 1 National Acme.
 Tooth round's, 12" Rochester aut. (2).
 Tumbling barrels, No. 3-S Globe, (2).

SECOND-HAND MACHINERY

FOR SALE BY

Clark Machinery Co., 1235-45 St. Clair Ave., Cleveland, O.
 Bolt threader, 2-spindle Acme, 1 $\frac{1}{2}$ ".
 Boring mill, No. 2 Rockford.
 Chucking grinders, No. 6 Bryant.
 Drill, 28" Barnes, b. g., p. f.
 Lathes, 14" to 24".
 Planer, 42" x 42" x 10' Gray, 2 heads.
 Planer, 26" x 26" x 7' Gray, 1 head.
 Punch press, No. 18 Bliss inclinable.
 Punch press, No. 1 Sidney inclinable.
 Turrets, Warner & S. Nos. 4 & 6.

Machine tools for every purpose. Send us your inquiries.

FOR SALE BY

Tubor, Velick & Co., Inc., - - 628-630 W. Lake St., Chicago, Ill.
 Telephones: Monroe 4199-6813. No Branches

No. 4 American Can.	PUNCH PRESSES.
Bliss No. 19.	Perkins punch presses, $\frac{1}{2}$ " str. (20). No. 15 single end punch.
Consolidated No. 14.	Long & Allstatter horn punch, capacity 14x1.
No. 15 Torris Wold.	
14" Excelsior.	DRILL PRESSES.
20" b. g., p. f., new, \$130.	Demco high-speed drills. Bench type drills.
20" drill presses (40), each \$40.	3 $\frac{1}{2}$ " Hilbert radial. 3 $\frac{1}{2}$ " Canedy-Otto radial.
26" Weigel.	
30" Reed-Prentice.	MILLING MACHINES.
No. 2 LeBlond.	No. 3 Kempsmith. A number of hand millers.
No. 2 Cincinnati universal.	LATHES.
11" x 5' Seneca Falls.	17" x 9' Chard, q. c., (9). 18" x 6' Lehmann, q. c., (2). 24" x 10' Canadian, q. c., d. b. g., (3). 22" x 10' Cisco, q. c. 25" x 10' Sidney. 26" x 12' Prentice.
13" x 5' South Bend.	
16" x 6' Hamilton, q. c., (2).	
16" x 6' Sidney, q. c., (2).	
16" x 6' Monarch q. c.	
16" x 8' Canedy-Otto.	
16" x 8' National, q. c.	
24" x 34" x 8' Putnam.	PLANERS.
30" x 30" x 8' Fitchburg.	30" x 30" x 12' Niles-B.-P., 2 heads. 36" x 36" x 7' Flather, 2 heads.
No. 2 Smith, hand.	SCREW MACHINES.
Pratt & Whitney, hand, (3).	Nos. 1, 2, 3 and 4 Foster screw mch's.
Bath universal, with magnetic chck.	GRINDERS.
No. 2 Manhattan surface.	No. 14 Besly, disc. Emery grinders, \$2 and up.
Gardner No. 6 disc grinder.	
WOOD-WORKING MACHINERY.	
Band saws, 36" Famous, new, (10).	Glue jointer, Falls.
Boring mills, Andrew, (3).	Shapers, double spindle, Whitney and Fay.
Saw table and jointer combined, portable.	Swing saws, Porter, (4).
MISCCELLANEOUS.	
Buffers, U. S. and Westinghouse, 8 h. p., b. b.	Pressed steel stools, with backs. Punch press, No. 3 Thomas.
Hack saws.	Punch press, No. 3 Robinson. Saw mandrels, \$3.
Lockers, steel.	Shaper, 16" Ames, b. g. Shaper, 16" Kelly, b. g.
Motors, 75 h. p. G. E., a. c., slip ring, 600 r. p. m., (2).	Shaper, 24" Kelly, b. g.
Motors, a. c. and d. c.	Thread hobber, Pratt & Whitney.
Paper cutter, 57" Oswego, & 5 h. p., fully automatic.	Time clocks, International.
Pressed steel bench legs, (1,000).	Trucks—1,000 factory trucks.
Pressed steel hangers and bearings, all sizes.	Woodworking machines.

Leather belting. Pulleys, shafting and hangers.

SECOND-HAND MACHINERY

FOR SALE BY

McMullen Machinery Company.

Automatic, 8" Cleveland.
Automatics, No. 00 B. & S.
Band saw, 10" Napier, metal.
Cut-off saw, No. 4 N. & B.
Drill, 31" Barnes, sliding head.
Grinder, Cleveland, profile.
Grinder, No. 6-A Bryant.
Lathe, 9'x21" Sundstrand, mfg.
Lathe, 24x26 Greenlee, flat turret.

Ask for Complete List.

Grand Rapids, Mich.

Miller, No. 2-H Becker vertical.
Pipe mch., 6" Merrill No. 64.
Press, Chicago scrap baler.
Press, No. 3 Manville, d. a.
Presses, No. 6 Manville, pillar, (3).
Presses, No. 6B Manville, pillar, (2).
Shear, No. 14 Pettigell, rotary.
Shear, No. 2 W. F. Co. 36" gang.
Welders, No. 10-A Thomson vert. (7).

FOR SALE BY

A. M. Stoehr Machinery Co.,

Bolt cutters, 3 & 6-spindle Acme.
Boring mills, 42" Baush; 54 & 60"
Niles; all have 2 heads; and others.
Compressors, 12 different sizes.
Drill presses, single spdl., L. & G.;
2-spindle H. & W.; 4-spdl. Foote-
Burt; 4-spdl. Barnes; 22" Rockford.
Gear hobbers, cutters; No. 12 Barber-
C., 48" & 60" G. & E.; 36" Fellows
gear shaper, and others.
Grinders, No. 3 LaSalle plain and
surface; 3x18" Norton, and others.
Header, No. 2 Manville.
Lathes, 22" to 44" McCabe; 18x8
Barnes, hvy. duty; 18x8 LeBlond,
q. c. g.; 16x8 Flather; 15 & 24 spin-
ning, and others.
Milling mch's., No. 25 Becker plain;
No. 6 Whitney; No. 0 Rockford pl.;
No. 3 Thurston dieing, & others.

560 W. Adams St., Chicago, Ill.

Oil extractors, centrifugal, (8).
Pipe machines, 6" Jarecki.
Punch presses, No. 16 Bliss horning;
No. 58 Crosby; and others.
Punch & shears, No. 3 L. & A., d. e.;
4" thru 11"; No. 14 W., d. e., 15"
throat, No. 66 Badger, hand;
No. 1-C New Doty, and others.
Riveters, 14-B & No. 5-A High
Speed; No. 1 Townsend; No. 1
L. & A., 4" capacity; and others.
Saws, 9x19 Sterligh high speed; 12"
band, and eight others.
Screw machines, Nos. 2 & 3 Foster
(12); Nos. 52 & 53 Acme, others
plain and automatic.
Shears, Pittsburgh alligator, 14".
Tapper, R. & S., 4" capacity.
Welders, both spot and butt.
Wire straightening machines, (5).

FOR SALE BY

Cincinnati Machinery & Supply Co., 215 E. Pearl St., Cincinnati, O.

SHAPERS.

12" Juengst, complete, \$175.
16" Cincinnati crank shaper.
20" American crank shaper.

26" Ohio crank shaper.
28" Gould & Eberhardt, crank.
20" Steptoe crank shaper, \$275.

MILLING MACHINES.

No. 1 U. S. hand millers, (5).
No. 2 Cincinnati plain, \$285.
No. 3 Brown & Sharpe plain.

No. 4 Brown & Sharpe plain.
No. 3 Cincinnati vert., high power'd.

LATHES.

14"x 6' LeBlond, q. c.
14"x 6' Lodge & Shipley, q. c.
16"x 6' Reed, geared head, q. c.
18"x 8' Monarch, \$325.

20"x10' Lodge & Shipley, q. c.
27"x18' Lodge & Shipley, q. c.
32"x16' Schumacher & Boye, q. c.

PLANERS.

24"x24"x 8' Gray, \$350.
26"x26"x 8' Gray.

30"x30"x20' Hamilton.
48"x48"x14' Gray.

GRINDERS.

No. 60 Heald cylinder grinders.
10"x20 Landis.

10"x30 Landis.
No. 2 Brown & Sharpe universal.

RADIALS.

3' Bickford, cone drive.
3' Prentice, sgl. pulley, gear box.

2' Gang, single pulley.
5' American.

Complete stock of machinery and supplies, new and used.
Write us your needs.

SECOND-HAND MACHINERY

FOR SALE BY

Foster Machinery Company,

Angle shear, No. 2 Cleveland, 4x4x $\frac{1}{2}$ " angle.

Bolt cutter, 1 $\frac{1}{2}$ " Acme.

Grinder, Greenerd, tool & cutter.

Grinder stand, Western No. 4, two 14" wheels.

Lathe, 18"x8" Lodge & Shipley.

Miller, No. 00 Brown & S., hand.

SQUARING

Geo. A. Ohl, 8', 3/16" capacity, power.

10203 Quincy Ave., Cleveland, O.

Miller, No. 00 Owen, Fox type.

Press, No. 1 Consolidated.

Riveter, Hanna, 24" throat, 15" gap,

1 $\frac{1}{2}$ " rivet.

Rivet hammers, No. 2-A, No. 4-A.

Shapers, 16" G. & E., (2).

Shaper, 16" Garvin.

SHEARS.

No. 210-A Pexto, power.

FOR SALE BY

Brownell Machinery Co.,

150 Pine St., Providence, R. I.

BORING MILLS.

No. 1 $\frac{1}{2}$ Beaman & Smith horizontal drilling, tapping, boring and milling machine, 3 $\frac{1}{2}$ ".

GRINDERS.

No. 2 Brown & S. cutter & reamer.

No. 1 Norton univ. tool & cutter.

No. 2 Norton univ. tool & cutter.

Taylor & Fenn wet tool.

METAL CUTTING MACHINES.

No. 7-K Atkins Kwik-Kut hack saw

8 $\frac{1}{2}$.

13"x16" Peerless h. s. hack saw.

MILLING MACHINES.

No. 13 Garvin b. g. plain.

No. 2 Owen plain.

No. 3 Owen plain.

No. 4 Cincinnati plain.

No. $\frac{1}{2}$ Van Norman duplex.

PLANERS AND SHAPERS

48"x72"x20' Gray, 4 heads.

36"x36"x14' Gray, 4 heads.

30"x30"x 8' Bement-Miles, 2 heads.

28"x30"x14' Whitcomb-B., 2 heads.

24"x24"x 6' Powell, one head.

17"x20"x 4' Whitcomb-B., one hd.

17"x17"x 4' Whitcomb, one head.

15" Hendey friction shaper.

16" Ohio plain shaper.

PRESSES.

Nos. 2, 3, 3 $\frac{1}{2}$ and 4 Greenerd arbor presses.

No. 24 Atlas arbor press.

No. 1 Standard broaching & drawing press, 7'.

TURRET MACHINERY.

2x24 Jones & Lamson flat turret.

3x36 Jones & Lamson flat turret.

1 $\frac{1}{2}$ x18 Pratt & Whitney, b. g., p. f.

No. 2-P P. & J. piston & piston ring.

1 $\frac{1}{2}$ " Gridley 4-spindle automatics.

1 $\frac{1}{2}$ " Gridley automatics.

MISCELLANEOUS.

Broaching machine, No. 2 Lapointe (Hudson).

Filing machine, Thurston.

Marking mchc. No. 6 Martin, hand.

Shaft straightener, Rockford.

WOOD-WORKING MACHINERY.

Band saw, 36" Crescent.

Jig saw, No. 1 Beach.

Jointer, 16" Sidney.

Lathe, 20x8 Fay & Scott.

Saw table, No. 650 Dover.

Saw table, No. 2 Crescent, boring & hollow chisel mortising attachs.

Saw table, Rollstone double arbor.

Trimmer, No. 1 American univ.

SECOND-HAND MACHINERY

FOR SALE BY

Wm. Mengo, (Retired from Business) **Dolgeville, N. Y.**
DRILL.
26" Prentice Bros., sliding head, back geared, power feed.
PLANER.
20"x30"x7' New Haven, 1 head, large chuck.

FOR SALE BY

Botwinik Brothers, Inc., - 67 Water St., New Haven, Conn.
MILLERS.
25—Pratt & Whitney 5" automatic, complete and in A-1 condition. Price
\$250.00 each, f. o. b. New Haven, Conn.
Wire, write or phone. Many other bargains.

FOR SALE BY

Boston Gear Works Inc., - Norfolk Downs, (Quincy) Mass.
ELECTRIC HARDENING FURNACE.
One F. C. 206 Hoskins electric furnace for hardening high speed steel, complete
with panel board, switches and ammeter. Wired for 550 volts, 75 amps.
Used about 80 heating hours. Serial No. 9659.

FOR SALE BY

Scott-Bansbach Machinery Co., - 130 S. Clinton St., Chicago, Ill.
Phone: Dearborn 3267.

A bargain sale.

AUTOMATIC SCREW MACHINES.
No. 19 Brown & Sharpe, (11) each \$ 550.
No. 00 Brown & Sharpe, (11) each 450.

FOR SALE BY

Bennett Machinery Co., - 30 Church St., New York City
Cold saw, 42" Newton, heavy.
Drills, 14" to 30" Barnes and Rockf'd.
Keyseater, No. 4 Mitts & Merrill.
Lathe, 18"x8' Hendey, yoke, q.c.g.
Lathe, 48"x28' Pond.
Miller, univ., No. 2 Milwaukee, cone.
Miller, univ., No. 3 Hendey, cone.
Planer, 54"x12' Pond, 4 head, belt.
Plate planer, 18' Niles.
Radial, 4' Dreses, cone drive.

FOR SALE BY

Star Foundry Co., - 214 Front Street, - Albert Lea, Minn.
Owing to changes in manufacture we offer:
Air compressor, 6"x6" dbl. cyl. Curtis, tank, 12 h. p. gas engine, 200' hose with couplings, one No. 80 Cleveland hammer, 1-1/2" air drill, all mounted on steel truck, portable. Price \$ 500.
Blower, cupola, No. 5 Sturtevant, with c. s. 50.
Boiler, 40 h. p. vertical, 120 lb. pressure. Price 100.
Bolt and pipe cutter, Wiley & Russell, 1/2" to 1 1/2" bolts, 1/2" to 2" pipe, c. s. 200.
Drill press, 20" Champion, lever, wheel & power fd., bk. grs., with ck. 75.
Grinder, 36" knife, 16" wheel 400.
Grinder, Schmidt cyl., c. s., blower and hose 300.
Hammer, 200 lb. upright power 500.
Motor, 20 h. p. Gen. Elect., a. c., 220 v., 3 phase, 3600 r.p.m., with starter 500.
Planer, 48"x48"x14' Niles, 1 head, c. s. Price 1,200.
Set of Patterns, 6 sizes, flasks, jigs, blue prints for Star Power Hammers 1,200.
Nearly all above machinery is under belt and can be inspected at our plant.

All are in good working order.

SECOND-HAND MACHINERY

FOR SALE BY

The Cincinnati Bickford Tool Co., - Oakley, Cincinnati, Ohio
Machine Tool Bargains.

14"x 6' Von Wyck.

16"x 8' Bradford.

17"x 6 $\frac{1}{2}$ ' Greaves Klusman.

HORIZONTAL BORING MACHINE.

One special construction Bickford.

MISCELLANEOUS.

Gear cutter, 26" No. 3 Brown & S.

Gear cutter, 36" Gould & Eberhardt.

17"x 6' 3" Hamilton.

24"x 10' Le Blond.

30"x 16' Lodge & Shipley.

LATHES.

Lathe, 15x7 South Bend, plain chge.

Lathe, 21x8 Le Blond hvy. duty, q. c. g.

Lathe, 24x10 Lodge & S., q. c. g.

Millers, No. 0 Burke, bench type.

Punch, Whitcomb, cap. 4×4 " geared.

Punch press, No. 3 Toledo, o. b. i.

Punch press, No. 2 Toledo, o. b. i.

Punch press, No. 2 Rockford, o. b. i.

Radial drill, American 3' plain.

Radial drill, S. C. H. 42" post type.

Turret lathe, W. & S. No. 2 hol. hex.

FOR SALE BY

Edward L. Klauber,

320 South Third St., St. Louis, Mo.

Bolt cutter, Landis sgl. sp., 1 $\frac{1}{2}$ " cap.
Bolt cutter, National, sgl. sp., $\frac{1}{2}$ " cap.
Die head, Landis, new, cap. 2" pipe.
Drill press, 34" Barnes, tapping att.
Drill press, 24" Aurora, s. h., b. g.
Drill press, Avey high speed.
Drill press, 3 spindle Dwight slate.
Gear hobber, No. 1 Farwell, 14" cap.
Grinder, Brown & S. No. 11 plain.
Grinder, B. & S. No. 3 cut. & reamer.
Grinder, Besly No. 10 disc, ring wh.

Lathe, 15x7 South Bend, plain chge.
Lathe, 21x8 Le Blond hvy. duty, q. c. g.
Lathe, 24x10 Lodge & S., q. c. g.
Millers, No. 0 Burke, bench type.
Punch, Whitcomb, cap. 4×4 " geared.
Punch press, No. 3 Toledo, o. b. i.
Punch press, No. 2 Toledo, o. b. i.
Punch press, No. 2 Rockford, o. b. i.
Radial drill, American 3' plain.
Radial drill, S. C. H. 42" post type.
Turret lathe, W. & S. No. 2 hol. hex.

FOR SALE

**5—No. 1 CINCINNATI Back Geared
Plain MILLING MACHINES** \$275.00 each.

**3—3', AMERICAN Sensitive Radial
Drills** \$250.00 each.

**2—36" BROWN & SHARPE Gear
Cuttters** \$950.00 each.

**2—12"x36" CINCINNATI Plain
Grinders** \$875.00 each.

2—No. 75 HEALD Internal Grinders \$425.00 each.

4 Spindle NATIONAL ACME Screw Machines

7—No. 52— $\frac{1}{8}$ " Capacity \$425.00 each.

3—No. 56— $2\frac{1}{4}$ " Capacity \$650.00 each.

CINCINNATI AUTOMATIC MACHINE CO., Cincinnati, Ohio

NEW 3 PHASE MOTORS CHEAP. 3 H. P. \$57.50; 5 H. P. \$67.50

LATHES

12" x 5' Cleveland, geared head.
14" x 6' Carroll-Jamieson, new.
14" x 6' Hamilton, grd. hd., motor dr.
14" x 6' Monarch, quick change.
14" x 6' Von Wyck, quick change
gear, taper attachment.
14" x 8' Sidney, double back geared.
16" x 6' Hamilton, style B.

TURRET LATHES and

No. 4 Defiance hand screw machine.
No. 4 Woods Tilted Turret.
14" Muhioland.
2x24 and 3x36 J. & L.

14" Niles, traveling head.
14" Steptoe, crank.
16" American, tool room.

22" x 22" x 8' Cincinnati.
24" x 24" x 6' Gray.
26" x 26" x 10' Gray, 1 head.

No. 3-A Willard-A inclinable.
No. 1 Toledo inclinable.
Nos. 1, 2, 2½ & 4 Robinson.

DRILLS and
3½" Silver, sgl. pulley, gear box dr.
3" & 4½" Morris plain gear box.
4' Universal Radial Drill Co. plain.
Electric drills, Black & Decker.

No. 1 Kempsmith universal.
No. 2 Kempsmith plain.
U. S. and Whitney hand.
No. 25 Becker plain, power feed.
No. 3 Kempsmith univ. and plain.

Nos. 1 & 78 W. & M. surface.
No. 2 W. & P. 10x30 universal.
6" x 15" Fitchburg plain.
12x36 Cincinnati universal.
12x42" & 16" x 30" Landis plain.
36" and 66" Yates plate.
Perfection cylinder.

Band saw, metal, Klemm.
Band saws, Napier 4" x 4", 10" x 10".
Bending rolls, 7' for 8" plate.
Boring mill, Colburn No. 3, tur. hd.
Boring mill, 54" & 60" Colburn, 2 lds.
Brake, 10', 18-gauge metal.
Broaching machine, No. 1 LaPointe.
Broaching machine, No. 3 LaPointe.
Compressors, 6x6, 8x8 and 12x10.
Drawing tables, adjust., 42" x 6' top.
Gear cutter, 26" No. 3 B. & S.
Gear millers, Bilton No. 1, (5).
Hammer, 40 lb. Bradley, helve.
Hammer, 150 lb. Standard drop.

16" x 8' Sidney, double back geared.
18" x 10' American, quick change.
20" x 10' Hamilton, rapid production.
24" x 24" Prentice, with raising block.
25" x 12' Sidney heavy duty.
28" x 8' Bridgeford, heavy duty.
8x60" & 10x72" Fitchburg Lo-Swing.

SCREW MACHINES

No. 3-B Foster, 5" capacity, new.
Warner & Swasey No. 2.
Nos. 52 & 56 National Acme auto.
6" Gridley single spindle, automatic.

SHAPERS

16" American b. g. crank.
16" O. & S. b. g. crank, new.
25" Smith & Mills, heavy duty.

PLANERS

30" x 30" x 10' American, 2 heads.
36" x 36" x 18' Pond.

PRESSES

Emco, bench, for radio parts.
No. 35 Niagara straight side.
Perkins, dbl. housing, wt. 4,000 lbs.

RADIALS

22", 24", 26", 28" and 32", sliding hd.
20" - 24" & 26" Barnes, all geared.
4-spindle Reed sensitive.
Electric drills, Thor, all sizes.

MILLING MACHINES

No. 3 LeBlond, with vertical attach.
No. 2 H Brown & Sharpe plain.
Briggs type "A" high duty, 24x8 table.
No. 7 Becker Lincoln type.
Oesterlein 24x7x18 plain.

GRINDERS

No. 60 Heald cylinder.
Schmitt cylinder grinder.
No. 3 Ohio universal & tool.
No. 4 Gardner 20" double disc.
No. 20 Bryant, chucking.
Capital internal, new, 2" x 2".

MISCELLANEOUS

Oil separator, Springfield.
Pipe machines, 2", 4" & 6".
Pumps, Gould triplex, 6x8" & 7x8".
Punch & shear 1 by 1, 10" throat.
Riveting hammers, type B, Nos. 2,
3, 4 & 5-A.
Scale, 1500 lb. Toledo, dial type.
Stereoscope, Shore.
Shear, No. 296 Robinson, 14 ga., 5'
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell 40".
Tapping mch., 1" Rickert-Shafer.
Tapping machine, Acme 6-spindle.
Threading mch., W. & P. 2-spindle.

**THE
OSBORNE & SEXTON
MACHINERY COMPANY
COLUMBUS OHIO**

DEPT. H.

JUST PURCHASED

(these two columns)

The Following Batch of Good Tools Which a Large Machine Tool Manufacturing Corp. Had Been Holding as Reserve—Equipment Not Worn Out, Not Obsolete, But Reserve.

1-24" x 24" x 6" Whitcomb Planer, 1 head, second belt drive.
1-24" x 24" x 8" Whitcomb, ditto.
5-24" x 24" x 10" Whitcomb, ditto, second belt.
2-24" x 24" x 10" Whitcomb, ditto, 2 hds.
2-26" x 26" x 6" Gray Planer, 1 head, like new.
1-24" x 24" x 6" Powell Planer, 1 hd.
5-30" x 30" x 12" Pond Planers, 2 hds., including elec. equipment, reversing motor drive, 230 volts, d. c.
3-NEW 30" x 30" x 12" Pond Planers, 2 hds., including elec. equipment, reversing motor drive, 230 v., d. c.
1-42" x 42" x 26" Pond Planer, 4 heads, including elec. equipment, reversing motor drive, 230 volts, d. c.
2-No. 5 B. & S. Vert. Millers, A1.
1-No. 4 Cincinnati Vertical Miller.
1-No. 2 LeBlond Plain Miller.
1-No. 2 LeBlond Universal Miller.
1-No. 3 LeBlond Universal Miller, excellent.
1-No. 0 Belt Feed LeBlond Miller.
1-No. 2 P. & W. Plain Miller, special can cutter, fixture on table.
2-No. 12 P. & W. Lincoln Millers.
8-5" P. & W. Automatic Millers.
4-No. 1 P. & W. Power Millers.
6-No. 2 P. & W. Column Power Millers (2), with long tables.
1-No. 4 Brown & S. Plain Miller.
1-No. 5 Brown & S. Plain Miller.
2-No. 2 Cincinnati Vertical Millers.
1-Waltham Thread Miller, bench.
1-6x132" P. & W. Thread Miller.
1-4x30" P. & W. Cylindrical Grinder.
1-P. & W. Deep Hole Drill Grinder.
1-No. 23 B. & S. Cutter Grinder.
1-Bryant Chucking Grinder.
1-Yankee Drill Grinder.
1-Washburn Drill Grinder.
3-Standard Wet Tool Grinders.
1-No. 2 Besly Disk Grinder.
3-No. 16 Blanchard Surface Grinders, floor motor drive.

1-Taylor & Fenn Wet Tool Grinder.
1-P. & W. Special Contour Cutter Grinder for grinding form tools.
1-Brown & S. Wet Tool Grinder.
1-Cincinnati Cutter Grinder.
1-No. 2 P. & W. Horiz. Traverse Drill.
2-4 spdl. Allen Ball Bearing Drills, 12" overhang.
8-3 spdl. Allen Ball Bearing Drills, 12" overhang.
4-32" Aurora Drills, back geared, two with tapping attachment.
3-26" Barnes Upright Drills, plain type, sliding head.
1-42" Cincinnati Bickford Drill, back geared, tapping attach.
1-8" Niles Semi-Universal Radial.
1-6" Niles Full-Universal Radial.
1-Taylor & Fenn High Speed Drill.
37-10x5" P. & W. Toolmakers Lathes, taper, draw-in.
3-14x6" P. & W. Lathes, pan bed, taper attachment.
1-16x6" P. & W. Lathes, with special circular table.
1-21x10 LeBlond Lathe.
1-Special P. & W. Bench Lathe for Internal Grinding.
3-No. 2 P. & W. Screw Shavers.
1-P. & W. 4" Centering Machine.
1-No. 2t P. & W. Special Double Head Centering Machine.
1-P. & W. Cam Cutter for peripheral cams.
1-No. 14 2-spdl. Profiler, nearly new.
3-Nutter & Barnes Cut-Off Saws, 8" capacity.
1-16" Stockbridge Shaper, cone.
5-No. 5 Greenerd Arbor Presses.
1-No. 3 Greenerd Arbor Press.
1-Barnes Horiz. Boring Mill, 7" table.
1-Dwight Slate Marking Machine.
1-Thompson Upright Polishing Stand.
2-18" Gorton Disk Grinders,

Simmons Machine Tool Corp.

NEW YORK
149 Broadway

ALBANY
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BUFFALO
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**THE MERRYWEATHER
MACHINERY CO.**
CLEVELAND
DETROIT **CINCINNATI**
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Machines of Quality

Several hundred used machines are stocked in our Cleveland warehouse.

Connected with this is a model machine shop devoted exclusively to rebuilding these machines.

Let us send you one of our circulars describing our methods, listing our stock and picturing our plant.

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New & Guaranteed Rebuilt Machine Tools

At Prices to Net You a Worth While Saving

BORING MILLS

- 1—Landis No. 35 horizontal.
- 1—Gisholt 42" vertical, 2 heads.
- 1—Colburn 48", 2 heads.

DRILLS—Upright and Radial

- 5—Sipp single spindle.
- 12—New 24" Sibley, upright.
- 2—Baker No. 310.
- 20—Rockford Aurora and Barnes, 20", 24" & 28" capacity.
- 2—New Turner No. 3, vert. tur.
- 1—Mueller 3½" Radial.
- 1—Baush 6" Radial.
- 1—N.-B.-P. 96" Ridgeway, motor drive, plain Radial.

DRILLS—Multiple Spindle

- 1—Natco No. 30, 12 spindle.
- 2—New Baush No. 3, 21 spdl.
- 1—New Baush No. 4, 56 spdl.
- 1—Fox, 6 spindle.
- 1—Moline, 4-spindle.

SCREW MACHINES—Automatic

- 12—Gridley 4-spdl., 7½, 1½, 1¾".
- 2—Gridley 4½", 3½" single spdl.
- 3—Gridley 2½", 4-spindle.
- 8—Cleveland ½, 1½, 2½", A.
- 16—B. & S. Nos. 2 & 6 full auto.
- 1—Cleveland 7½" A.
- 1—New Britain 1x5 bar mch.
- 10—New Britain Nos. 23, 24, 33, and 34.

MILLING MACHINES

- 1—New Rockford No. 2½ Univ.
- 1—No. 1 B. & S. No. 3 Univ.
- 1—Cincinnati No. 2 Universal.
- 2—Rockford No. 1½; No. 2 Pl.
- 1—LeBlond No. 2½ Plain.
- 2—Brown & S. Nos. 2 & 4 Plain.
- 4—Cincinnati No. 4, a. p. d.
- 1—B. & S. No. 13-B Plain.
- 3—Becker Nos. 2H, 4B, Vertical.
- 6—Becker Nos. AB & 5C, Vert.
- 1—Milwaukee No. 1½-B vert.
- 1—Cincinnati 48" Duplex.
- 2—New Garvin No. 2 Duplex.
- 1—Newton Duplex.
- 1—Van Norman No. ½ Duplex.
- 2—P. & W. 4½x12 Thread.
- 1—Lees-Bradner No. 8 Thread.

Also 500 other tools, such as Shapers, Presses, Bolt Cutters, Broaching Machines, Hot and Cold Saws, Punches and Shears, etc.

- 8—P. & W. 6x14, 6x48, 6x80 Thread.

GEAR CUTTERS

- 15—Barber-Colman Nos. 3 & 12.
- 4—Hercules 8".
- 7—Brown & S. 3x36; 3x26; 4x36.
- 1—Cincinnati No. 4-A, 4x48.
- 3—G. & E. No. 18-H.
- 1—G. & E. 60" spur.
- 20—Fellows Nos. 61, 6 & 615.
- 20—Gleason bevel, 6", 11" & 18".
- 1—Lees-Bradner No. 5A gear generator.
- 1—Ingle 12" tooth rounder.

PLANERS

- 7—Putnam 26x26x8", 2 heads.
- 1—W. & P. 24x24x10".
- 1—New Cleveland 36x36x8".
- 2—Gray 38x38x20, 3 hds., mtr. dr.
- 1—Putnam 48x48x12", 2 heads.

GRINDERS

- 1—Blanchard No. 16 Surf. m. d.
- 1—Brown & Sharpe No. 4 Univ.
- 1—Brown & Sharpe No. 14 Plain.
- 1—Springfield 12x12x48 Vert.
- 4—Cincinnati No. 2, 12x36.
- 7—Norton 6x32, 10x36 & 16x36.
- 1—Fitchburg 12x54.
- 12—Bryant Nos. 20 & 6 chucking.
- 2—Bryant No. 15 double spindle.
- 28—Heald Nos. 65, 60 and 70.
- 3—Heald Nos. 255 & 260.
- 1—Van Norman No. 34.

TURRET and SCREW MCHS.

- 10—W. & S. No. 1 Wire Feed.
- 1—Warner & Swasey No. 3-A.
- 4—Foster No. 1-B Universal.
- 1—New Foster No. 10 Turret.
- 4—Greenlee 2½"x26" Turret.
- 1—J. & L. 2-spindle Turret.
- 1—Libby 26".
- 5—Foster No. 4 Screw.
- 1—W. & S. No. 4 Universal.
- 40—B. & S. Nos. 0, 1, 2, 6, w. f.
- 1—Acme Fox Monitor.
- 1—W. & S. No. 6 b. g., p. f.
- 2—P. & W. 1x14" screw.
- 6—Potter & Johnston No. 6A.
- 6—Potter & Johnston No. 5-A.

MOREY AND CO. INC. 408 Broome St.,
NEW YORK, N. Y.

Opportunity Knocks Again For the Conservative Buyer

Real Values in Machine Tools—

Lathes

- 1-48" x 21" Pond (Plainfield) with motor.
- 1-44" x 45" S W Putnam (Fitchburg) with motor.
- 3-32" x 12" Pittsburgh.
- 1-30" x 28" Pond (Plainfield) with motor.
- 1-24" x 12" Reed Prentice, geared head, m. d.
- 1-20" x 8" Reed.
- 1-18" x 8" Reed.
- 1-18" x 10" Schumacher & B., t. a.
- 2-18" x 8" Rockford semi q. c.
- 1-3½ x 84" Lo-Swing, 2 carriages.

Milling Machines

- 1-No. 2 Brown & Sharpe univ.
- 3-No. 2 Brown & Sharpe plain.
- 1-No. 2 Brown & Sharpe vertical.
- 1-No. 3 Brown & Sharpe plain.
- 1-Becker No. 5-B vertical.
- 1-Model AB Becker vertical.
- 2-No. 13-B Brown & Sharpe.
- 1-No. 2 Cincinnati, single pulley, plain.
- 1-U. S. hand miller.
- 1-Bonomi & Eck hand miller.

Grinders

- 1-No. 2 Brown & Sharpe cutter.
- 1-No. 2 Brown & Sharpe surface, with mag. chuck.
- 1-No. 2 Brown & Sharpe univ.
- 1-Worcester internal.
- 1-21 x 96 Norton plain.
- 2-10 x 50 Norton plain.
- 2-Landis crankshaft.
- 1-No. 6 Gardner disc.

Boring Mills—Vertical

- 1-10' to 16' Niles (Hamilton) with motor.
- 1-96" Niles.

Boring Mills—Horizontal

- 2-No. 2 Rockford horizontal.
- 1-Bonomi & Eck horizontal.
- 1-Bonomi & Eck (original) horizontal.

Planers

- 1-72" x 72" x 24" Detrick & Harvey, motor drive.
- 1-48" x 48" x 12" Putnam, 3 heads, with motor.
- 1-36" x 48" x 18" G. A. Gray, 2 hds. on cross rail, 2 side heads, 14 h. p. motor.
- 1-30" x 30" x 14" G. A. Gray, 2 hds. on cross rail, 10 h. p. motor.
- 1-24" x 24" x 6" G. A. Gray planer.

Presses

- 1-S. 304 Ferracute.
- 1-150-ton high speed steam.
- 1-No. 108½ Cleveland punch press.
- 1-78½ Bliss str. sided, 52000 lbs.
- 1-No. 26 Toledo cam press.
- 1-No. 78½ Toledo.
- 1-No. 68 Stoll, straight side.

Drill Presses and Radial Drills

- 2-D 2 Colburn.
- 1-26" Barnes.
- 1-34" Barnes.
- 1-3½" Fosdick & Holloway radial
- 1-6 spindle Allen sensitive.
- 1-36" Aurora.
- 1-12 spindle Harrington.
- 1-6 spindle Foote-Burt.
- 1-Moline Hole Hog.
- 1-6' Niles radial.
- 1-2½" Mueller radial.

Turret & Screw Machines

- 2-3½" Gridley sele. spdl. autos.
- 2-Model B, 2" Cleveland autos.
- 3-Model B, 2" Cleveland automatics, New.
- 2-Model B, 1½" Cleveland auto.
- 2-24" Gisholt turret lathes.
- 1-No. 6 Foster screw.
- 2-No. 4 Foster screw.
- 5-No. 4 Dresses turret lathes.
- 1-18" Gisholt turret lathe.
- 1-21" Libby turret lathe.
- 1-No. 6 Warner & Swasey turret.
- 1-No. 2 Brown & Sharpe screw.
- 1-No. 1 Brown & Sharpe screw.
- 1-No. 4 Woods tilted turret.

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Offices and Warehouses: 2261 E. 14th St., Cleveland, Ohio

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Sheet Metal
Machinery

- No. 169 $\frac{1}{4}$ Toledo toggle press, strokes 26 and 14".
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- No. 42 Robinson double crank geared press, 2" stroke, Like New.
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- No. 3 Cincinnati Millers, rebuilt, (3).
- No. 3 LeBlond Heavy Miller, vertical attachment.
- No. 6 Becker Vertical Miller, 60" table feed.
- No. 3 Kempsmith Plain Miller, excellent condition.
- No. 3 Pratt & Whitney Die Sinker, rebuilt.
- No. 4 Milholland Screw Machine, power feed to turret, 15 $\frac{1}{8}$ " capacity. Excellent condition.
- 20" Kelly B. G. Shaper, swivel table, New.
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- No. 31 $\frac{1}{2}$ Van Norman Automatic Ball Race Grinder.
- 16"x48" Landis Crank Pin Grinder.
- 16"x96" Landis Plain Grinder.
- 5' Prentice Radial Drill.
- 300 Others, Planers, Drills, Lathes, Boring Mills.

58"x56"x14' Gorton Planer, 4 heads, 35 H. P., General Electric, reversing motor drive, NEW, NEVER USED, at half price of a new one.

A. D. White Machinery Co.

108-114 N. Jefferson St.,

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MACHINE TOOLS NEW AND USED

Prices Warrant Your Attention

14" x 6' American Lathes, q. c. g.
18" x 8' LeBlond Lathes.
18" x 10' LeBlond Lathes, q. c. g.,
taper attachment.
34" x 60" Lo-Swing Lathe, 2 carr.
2" x 24" J. & L. 2-Sp. Tur. Lathes.
6A P. & J. Automatics.
3' American sensitive Radial
Drill, taper attachment.
2" Pilton Bench Drills.
No. 1 Pratt & Whitney 2-spindle
Deep Hole Drill.
5" x 18" Ott Cyl. Grinder (NEW).
No. 120 Gardner Disc Grinder.
No. 10-18" Healy Disc Grinder.
No. C2 Becker Vertical Miller.
No. 1 B. & S. Universal (old
style) Miller.
No. 2 P. & W. Pl. Head Miller.
4" P. & W. Spline Miller.
No. 25 Becker Plain Millers.
Miscellaneous tools, such as cutters, drills, reamers, magic chucks,
emery wheels up to 26" dia., 3" face.

No. 1 Standard Hand Millers.
Wisconsin Hand Millers.
12" B. & S. Univ. Index Centers.
14" Cin. Univ. Index Centers.
10" Becker 3-sp. Index Centers.
14" Becker Plain Index Centers.
No. 4 I Naze Hammer, m. d.,
10 h. p. motor.
No. 6 Fellows Gear Shapers.
12" Ingle Tooth Rounder.
8" H. & G. Threading Machine,
with die head.
No. 2 Rockford b. b. Bal. Tools.
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1-1 h. p. 220 v., d. c., 1200 r. p. m.
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5-20 h. p. 230 v., d. c., 850 r. p. m.

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After our Inventory is a good time to buy

Air compressor, 1600 cu. ft. cap
G. E., complete with 20 h. p.
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Era" vertical, with side head
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Grinder, plain, 12" x 36" Modern.
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Brown & Sharpe.
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Lathe, 28" x 24" Schumacher &
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Miller, No. 2 Cleveld's sgl. pul. dr.
Miller, No. 3 Cincinnati, vert.,
single pulley drive.
Planer, 30" x 30" x 8" Clev., 2 hds.
Press, No. 512 Niagara s.s., s.b.g.
Riveter, 20-ton Hanna vert., 75"
reach, 16 gap, cap. 7/16" cold
or 1" hot rivets.
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geared friction head.
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No other Tools like these on the Used Machinery Market

30" Swing x 40' Bed, Lodge & Shipley Quick-Change, Double Back Geared, Hollow Spindle, Single Pulley, arranged for Motor Drive.

80" Swing x 46' Bed, Putnam Lathe. All Steel Geared Motor Drive.

Inspect them and get the "before moving price."

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We have a few rebuilt "2-in-1" lathes. One of them, a 32¹/2" x 54" Swing Lathe with a 14" Bed is exceptionally good. It has passed the tests of a new lathe and carries our same guarantee. The equivalent of two lathes for the price of one.

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26/48" Swing x 12' Bed.
26/48" Swing x 22' Bed.
26/48" Swing x 28' Bed.

Some of our "Former Pattern"
Lathes 24/40" and 26/44" Swing.
Very low price.

Planers

72" x 72" x 24" Niles, 4 Hds., Belt Dr.
48" x 48" x 30" Putnam, 4 Heads.
48" x 48" x 14" Pond, 2 Heads.
48" x 48" x 15" Sellen, 3 Heads.
26" x 26" x 6" Niles, 1 Head.

Boring Mills

8" Niles, 2 Heads.
72" Gisholt, 2 Heads.
50" Bullard, 2 Heads.
48" Gisholt, 2 Heads.
42" Baush.
4 $\frac{1}{4}$ " Bar Niles Horizontal.
4 $\frac{1}{4}$ " Bar Bement Miles Horizontal.
2 $\frac{1}{2}$ " Bar Bement Miles.

J. J. McCabe Lathe & Machinery Corp'n
SINGER BUILDING - - - NEW YORK CITY

NEW MACHINERY

- 1—No. 4 Baush Multiple Spindle Drill, 30x46" head, twenty-two 2" spindles.
- 1—No. 536 Newton Horizontal Milling Machine, table 20"x8".
- 1—No. 25 Williams & White Bulldozer.

USED MACHINERY

- 1—Bement-Niles Planer Type Slab Milling Machine, table 24"x8".
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- 1—Midwest Centrifugal Pump, 500 gallons per minute, 210' head.
- 2—50 H. P. General Electric Vertical Motors for above pump, 1750 R. P. M., 60 cycles, 3 Phase, 440 volt.
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Used Porter-Cable Mfg. Lathe, 9"x14", complete with counter-shaft, good condition	\$ 250.
Used Porter-Cable Mfg. Lathe, single pulley drive, high speed, practically new	275.
Used No. 12 B. & S. Plain Production Miller, good condition	190.
Used Grant Lincoln Type Geared Head Milling Machine, good heavy production machine	150.
Used No. 44 Crosby C type Punch Press, bolster plate, 21"x30", flywheel 33 $\frac{1}{2}$ "x4", good condition	250.
No. 1 Garvin Screw Mch., 8" cap. thru collet, practically new	195.
Used No. 6 Foster Screw Mch., motor driven, 220 volt, 3 phase, 60 cycle, bar feed & several hundred dollars worth of extra equipment. Good shape. Can be inspected under power	675.
Used 4-spindle Barnes Drill, each spindle equipped with silent chain drive, capacity of standard 20" drill	250.
No. 2 LeBlond Plain Heavy Duty Mill, late type machine, good condition, may be inspected under belt	625.
No. 3 O. B. I. Toledo Press, practically new	325.
14"x8" Carroll-Jamieson Lathe, quick change gear, good cond.	325.
13"x8" Willard Lathe, semi-quick change, good condition, can be inspected under belt	250.
J. A. Fay Combination Saw Table, A-1 condition	225.
American two-spindle Shaper, A-1 condition	150.

This Is Only A Partial List

Lowest Prices!

and The World's Greatest Stock!

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16"x 8' Bradford, q. c. g.
18"x 8' Lodge & Shipley, s. p. d.
21"x12' LeBlond rapid production.
30"x16' LeBlond, q. c. g.

PLANERS

22"x22"x 5' Gray.
30"x30"x10' Cincinnati.
36"x36"x12' Powell.

SHEARS

24" throat Morgan double end, capacity 5/16"x24"
Type RT Pels I-beam, 15" cap.
No. 2 Bethlehem rotary, 3/16" cap.
20" Mackintosh bloom.
24" Chicago Foundry Co. alligator.
5" Carlin alligator.

GRINDERS

20"x54" Diamond wet surface.
16"x68" Landis crankshaft.
16"x66" Landis universal.
16"x36" Landis universal.
10"x48" Landis universal.
12"x36" Fitchburg plain.
No. 224 Diamond cyl. roll, plain.

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58' Curtis vertical.
67' Ingersoll horizontal.
275' & 350' Gardner.
464' Sullivan.
950' Laidlaw.
1750' L. D. & G.

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80-lb. & 500 lb. Bradley vertical.
500-lb. Beaudry.

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600, 800, 1000 and 1500 lb. sgl. frame.
2000, 2500, 4000, 6000 double frame
Bement and Chambersburg.

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400, 600, 800, 1000, 2000, 2500 & 3000 lb.
Pratt & Whitney, Bliss, Union and
Chambersburg.

*Machinery Bulletin No. 209, describing our
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COLD SAWS

90" Newton cutting-off.
62" Newton cutting-off.
36" Newton cutting-off.
20" Newton cutting-off.

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10"x14" Baldwin 36" gauge.
10"x16" Vulcan 36" gauge.
11"x14" Vulcan 36" gauge.
18"x24" Baldwin 4-wheel saddle tank.

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250 H. P. Standard water tube,
200 lb. pressure.
250 H. P. Wickes vert., 200 lb. pres.
150 H. P. hor. ret. tub., 100 lb. pres.
500' of 18" Stack.
72" of 36" with cast iron base and
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130' of 48".
140' of 60".

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Sull. Dia. Pros. Drill, 2" core,
10-ton Morgan Elec. Crane, 73' span.
15 ton Industry Locomotive Crane,
38' boom.
95-ton Bucyrus R. R. Type Steam
Shovel.
70-ton Bucyrus R. R. Type Steam
Shovel.
No. 6 American Can Co. O. B. I.
Punch Press.
72" Colburn Vert. Boring Mill, 2 hds.
16" Betts Slotter.
No. 7-H Becker Lincoln Type
Miller.
No. 23 Hendey Lincoln Type Miller.
No. 2 Wood Tilted Turret Lathes,
1" capacity.
No. 4-B Williams & W. Bulldozer.
2" Curtis Pipe Threading Machine.
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7500-30,000 Gal. Storage Tanks.
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7000-Gal. Acid Tank Cars.
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Are You Thinking—

Of installing a Radial Drill? If so, the following machines are REAL bargains:

- 1—2½" Standard type, heavy duty, MUELLER radial drill, gear drive.
- 1—3" Standard type, heavy duty, MUELLER radial drill, gear drive.
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Prices will arouse interest

Write and Satisfy yourself

The Mueller Machine Tool Company

Radial Drills and Lathes

ESTABLISHED 1902

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EXCLUSIVELY

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- 3—No. 55 Toledo, geared.
- 3—No. 55½ Toledo, geared.

- 2—No. D201 Ferracute.

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- 3—No. 666 Toledo, 1000 tons.
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- 6—No. 83 Consolidated.
- Nos. 41, 42, 43 & 44 Toledo.

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- 4—No. 9A Z. & H. Tie Rod, 37° between uprights.
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- 1—No. 95¾ Bliss, geared 42½° between uprights.
- 1—No. S31 Ferracute, 33¾° between uprights.
- 1—No. SG79 Ferracute, geared, 100° between uprights.
- 1—No. 2 Bliss, 28° bet. uprights.
- 2—No. 202A & 202B Toledo, Gap.

Over 1200 Presses in Stock

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Joseph HYMAN & Sons

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We are discontinuing business and have for sale all of our Machinery, Motors, Precision and Laboratory Instruments, Plating Equipment, Machine Shop Accessories, Miscellaneous Factory Equipment, Manufacturing Supplies and Materials, Small Tools, Grinding Wheels, Office Equipment, Etc. Copy of Stock List with prices and Photographs of each item will be mailed on request.

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No. 2-B Milwaukee Universal (not used 25 hours.)

No. 3 Kempsmith Plain.

No. 2-A Hendey Norton Plain.

No. 1 Kempsmith Plain.

No. 4-B Becker Vertical.

No. 6 (New) Whitney Hand.

No. 1 Bristol Hand.

No. 3 Lees Bradner Thread Mills, (2).

No. 13 Brown & Sharpe Mfg. Type.

No. 32 Kempsmith Pl. Linc. Type, (2).

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No. 12 Barber-C., 28" hole thru sp., (2)

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GRINDERS

10"x50"-10"x36"-6x32" Norton Plain.

10"x36" No. 2 Landis Universal.

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No. 14 20" Besly Disc.

LaSalle Combination Tool & Surface

No. 40-BB Crown Polishing Lathes.

Dumore Electric Tool Post Grinder.

U. S. Electric Tool Post Grinder.

Wheel Hds. for No. 70 Heald Int, (2).

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Three ft. American Radial.

24" Superior Stationary Head.

22" W. F. & J. Barnes sliding head.

22" W. F. & J. Barnes 3-spindle.

20" W. F. & J. Barnes stationary hd.

20" W. F. & J. Barnes 3-spindle.

10" W. F. & J. Barnes stationary hd.

W. F. & J. Barnes 3 sp., 9" Overhang

2 spindle Francis Reed sensitive.

U. S. Electric Bench Type, 6"

Overhang, (2).

No. 10 Baush Sixteen Spindle.

LATHES

14"x 6' Hendey, taper and draw-in

attachments.

11"x 4' Blond Speed Lathe.

34"x60" Lo-Swing.

PRESSES

No. 34 Toledo.

No. 2 Foot Press.

SCREW MACHINES-TURRET LATHES

No. 7 2" Bardons & Oliver.

14"x9" Acme.

MISCELLANEOUS

9" Bliss Drop Press or Belt Hammer

8"x36" Brown & S. Bench Centers.

10" Hendey Univ. Index Centers.

10" Brown & S. Pl. Index Centers.

No. 1 Root Rotary Pressure Blower.

2" Holton Cut-off Machine.

Wagonhurst Blue Print Machine.

Prestolite & Oxwe'd Welding Torch

No. 1 Johansson Gauge Blocks and

Accessories and Limit Gauges.

Bausch & Lomb Photomicrographic.

Brinnell Hardness Testing Machine.

Prestwich Fluid Gauge.

Hoskins Recording and Wall type

Pyrometers.

24" American Shaper.

Rhodes Shaper and Slotter.

No. 2 J. N. Lapointe Broach.

No. 2 Knowles Broach.

No. 6-A Potter & J. Chucking Mch.

100 lb. Bradley Upright Helve Ham.

No. 2 Grant Riveter.

No. 2 Whiton Centering Machine.

No. 1 Whiton Centering Mchne, (2).

8"x8" Bury Air Compressor, (2).

6"x6" Peerless Hack Saw.

No. 2 Garvin Tapping Machine.

No. 2 Davis Keyseater.

1" Geometric Threading Machine.

Toledo type 7-C Butt Welder.

Bellevue, Brown & S., Gilbert & Barker, Stewart and Tate-Jones Furnaces.

Complete Plating Equipment consisting of generator, tanks, conveyor, etc.

Micrometers, Snap Gauges, Thread Gauges, Plug Gauges, Lathe Chucks, Drill

Chucks, "C" Clamps, Air Hammers, Die Heads, Vises, Tool Steel, Strip Steel,

Tubing, Cold Rolled Steel, Drills, Reamers, Milling Cutters, Emery Wheels, etc.

Penfield Axle Company, Peru, Ind.

Good Machinery Bargains:

28" Gould & Eberhardt B. G. Crank Shaper.....	\$ 900.
No. 12 Barber-Colman Gear Hobber.....	950.
18"x96" Norton Plain Cylindrical Grinder.....	1100.
Automatic Mch Co. Threading Mch., very fine cond., complete.....	450.
Six-Spindle New Britain Automatic, 1 1/8"x7".....	1200.
30" Cincinnati-Bickford Radial, 90%.....	795.
38" x16 1/2" Niles-Bement-Pond Lathe, with motor.....	1350.
42"x20" Niles Triple Geared Lathe.....	1200.
48"x28" Niles Triple Geared Lathe.....	1575.
6" Niles Universal Radial Drill.....	1100.
12"x5" Shepard Q. C. Lathe, with milling attachment. \$150.	Norton running balancing Mch.
18"x6" Fay & Scott Lathe, \$175.	No. 4 Verdin Inclinable Press.
42" Bullard Boring Mill.	No. 20 Bliss Inclinable Press.
26"x26"x6" Gray Planer, 1 head.	No. 6 Rockford Geared Press.
32"x32"x12" Pond Plr 2 hd \$400.	50 Ton Lucas Forging Press.
3" Lucas Horizontal Boring Mill.	Style A Long & Allstatter Punch & Shear, 2 1/8"x1".
(3) 2B Brown & Sharpe Millers.	28" Aurora Drills.
Pratt & Whitney Thread Miller.	Barnes 4-spindle Drill.

More Than 300 Other Items Of Machinery In Stock

Norton-Broadway Machinery Co., Cincinnati, Ohio

Forging Machinery

Upsetters:—1", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4".

Bulldozers:

Williams-White, No. 1, No. 2, No. 3, No. 4, No. 5, No. 7.

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Steam Drop 1500 lbs. and 1000 lbs. and Crank Lift Drop.

Single and Double End Punch Presses:

All capacities in depths of throat.

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Shears:

Pels FV55, capacity 5".

Other Alligator and Bar Shears, capacities 1" to 5".

Threading Machines:

Single and double spindle from 1" to 3".

Miscellaneous:

Ajax and Acme Hot Saws and Burring Machines.

No. 1 and No. 3 Ajax Forging Rolls.

No. 19 53" Besly Vertical Spindle Disc Grinder.

No. 40 Quickwork Rotary Shear.

No. 1 Cleveland Horiz. Bending and Straightening Mch.

10x10 Curtis Air Compressor.

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**SLIGHTLY USED
BUT
EQUAL TO NEW**

**36" Gould & Eberhardt Spur and
Bevel Gear Cutter.**

**No. 12 NATCO Multi - Driller, with
10"x16" head, bored for
twelve, equipped with seven
1" and one 1 $\frac{1}{4}$ " spindles,
and tapping attachment.**

**10"x72" Norton Plain Cylindrical
Grinder.**

**24" Milwaukee Back Geared Crank
Shaper.**

**Marshall & Huschart Machinery Co.
17 South Jefferson Street,
CHICAGO, ILL.**

HI-GRADE
SLIGHTLY USED EQUIPMENT
With as good as new money back guarantee

PARTIAL LIST

Drill Presses

20" 4-Spindle Rockford.
No. 17 4-Spindle Foote-Burt.
No. 22 18-Spindle Natco.
3" Cinti-Bickford Radial.
4" American Sensitive Radial.

Grinders

6 x32 Norton Plain.
10x36 Norton Plain.
10x50 Norton Plain.
No. 10 Brown & Sharpe Plain.
Ingenoll Cutter.

Automatics

7/8"-1 1/4" Cleveland Model A.
2 1/4"-3 1/4" Cleveland Model A.

Send us your inquiries

Mid-West Machine Tool & Supply Co.
DAVENPORT, IOWA

Turret Lathes

1 1/2" Acme B. G., Friction Head.
24" Gisholt.
24" Bullard Vertical.
No. 6 Warner & Swasey.
No. 4 Millholland Universal.

Millers

No. 2 Hendey Plain.
No. 3 Cincinnati Plain.
28" Cincinnati Duplex.
13-B Brown & Sharpe Production
2-Y Brown & Sharpe Plain.

Miscellaneous

No. 12 BarberColman Hobbers.
F-24 Badger Single End Punch.
No. 3 LaPointe Double Broach.

Surplus Machinery For Sale

No. 8 Duplex Becker Milling Machine.
No. 1 Knight Milling and Drilling Machine.
20" Double Spindle Rockford Drilling Machine.
1-22" Libby Turret Lathe.
1-No. 3 Broaching Machine.
1-1/4" Capacity Grant Riveter.
1-16" Hendey Shaper.
1-8-Spindle Bosch Drilling Machine.
1-No. 4 Foster Turret Lathe.
1-21" Swing Greenlee Turret Lathe.
2-30" Vertical Boring Mills.
1-10"x72" Norton Grinder.

Prices and description furnished on request. We offer the above machinery together with a number of manufacturing specialties with established markets. Will close this out at bargains on account of changing our line of manufacture.

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ORRVILLE, OHIO

Must Vacate Our Warehouse— Attractive Prices To Move Stock

BORING MILLS:

30" Warner & Swasey Vert., table 29" dia..... \$200.
36" Niles, 2 swivel heads, table 33" dia..... 800.

GRINDERS:

36" 48" Bridgeport Extension, 1 swivel head..... 325.

Webster & Perks D. E. Heavy Foundry Type,
takes wheels 24"x4"..... \$ 50.

LATHES:

Norton D. E. Heavy Foundry Type, takes
wheels 24"x4"..... 50.

19" x 10' LeBlond, b. g., hollow spindle, motor
drive, as is..... \$150.

21" x 12' Johnson, hollow spindle, taper attach..... 275.

24" x 16' 6" Johnson, solid spindle..... 375.

26" x 10' 6" Walcott Hvy. Duty Q.C.G., 7, ea..... 650.

24" x 6" Gisholt Turret, 6 1/4" hol. spdl., 2, ea..... 950.

3" x 36" Jones & Lamson Flat Turret, as is..... 200.

3" x 36" Jones & Lamson Flat Turret..... 950.

2 1/4" x 24" Jones & Lamson Flat Turret..... 850.

MILLING MCHE.:

No. 3 Cincinnati Plain, table 12"x3'11", as is..... \$ 250.

PRESSES:

No. 2 Baird Ft. Power, 2 3/4" str., bench type, ea. \$ 10.

Straight Side Punch Press, 3/4" stroke, 10 1/4" bet.
housings, mounted on iron stand..... 50.

No. 56 Knuckle Joint Embossing Press, 60 tons..... 150.

Waterbury-Farrel Rotary Shear, about 16 ga..... \$ 45.

Mahoning Single End, 32" throat, cap. 1" x 1"..... 375.

Covington No. 2 Sgl. End, 12" thrt., cap. 1" x 1"..... 375.

PUNCHES and SHEARS:

25 lb. Bradley Cushioned Helve..... \$140.

40 lb. Bradley Cushioned Helve..... 175.

800 lb. Bement Single Frame Steam Forging..... 475.

2000 lb. Bement-Miles Sgl. Frame. Stm. Forg. g..... 1300.

2000 lb. Bement-Miles Steam Drop..... 475.

14" Gould & Eberhardt Single Geared Crank..... \$160.

24" Cincinnati Back Geared Crank..... 650.

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Baler, No. 8 Poston Hopper Door Steel, makes
bale 16"x22"x28" weighing 100 lbs..... \$ 10.

Bender, Hand Power, Bending Length 12"..... 10.

Chuck, Newton 9", 3-Jaw Independent Steel..... 10.

Engine, Gas, 15 H. P. Fennel Horizontal..... 75.

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and Chisels, 100 lbs., lot..... 5.

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Milling Cutters, assorted sizes, 75, fine condition.

1/2 present new cost.

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Pipe Machine, Eaton-Cole-Burnham 2 1/2" to 8"..... 450.

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to 23" wide, 33" long..... 15.

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Taps, lot of about 100 miscellaneous, 1/4 to 1 1/2"..... 15.

Vises, 6" Jaw Machinists Bench, plain jaw and
plain base, some swivel base, each..... \$7.50.

SHAPERS:

MISCELLANEOUS:

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Good Used Tools

Sensitive Drills—Single & Multiple Spindle.

Upright Drills—20", 24" and 26".

Radial Drills—2', 5' and 6'.

Cylinder Grinders—Norton, B. & S., Morse.

Surface Grinders—B. & S.

Lathes—14" to 32".

Millers—Vertical and Horizontal.

Planers—30" and 36".

Presses—Inclinable and Straight Side.

Shapers—16" Steptoe and Queen City.

Screw Machines and Turret Lathes.

Stocker-Rumely-Wachs Co.

117 N. Jefferson St., Chicago, Ill.

Used Machine Tools

1—42" x 42" x 12' G. A. Gray Co., Spur-Geared Planer, with two rail heads, power elevator and countershaft for belt drive; fine condition.

1—30" Colburn Vertical Boring Mill, with countershaft arranged for motor drive, with three sets chuck jaws.

1—30" Gisholt Screw Cutting Boring Mill, with change gears, 4-step cone, back gear, double friction countershaft.

1—No. 25 Foote-Burt Heavy Duty Drilling Machine.

1—No. 3 Baker Bros. Keyseating and Slotting Machine, capacity to cut keyways 24" in length by 3" in width, or with chamber hub and extended cutter bars will keyseat 36" long; any work up to 72" in diameter can be chucked with the column in the outside position; largest diameter of cutter bar used 2 7/16".

1—No. 1 Barrett Horizontal Boring Machine, 3 1/2" bar, with two Star facing heads and countershaft.

THE E. A. KINSEY CO., 335 West Fourth Street, **CINCINNATI, O.**

BRANCHES: INDIANAPOLIS, IND., HAMILTON, OHIO, DAYTON, OHIO,
LOUISVILLE, KY., COLUMBUS, OHIO

Real Values—Real Rebuilt Tools

MILLING MACHINES

No. 4 LeBlond univ., cone pulley.
No. 3 Standard Ciotti univ., sgl. pul.
No. 3 LeBlond univ., cone pulley.
No. 2 Hi-Power Cin'ti univ., sgl. pul.
No. 2 LeBlond univ., cone pulley.
No. 3-B heavy B. & S. plain, sgl. pul.
No. 3 Hi-Power Cin'ti pl., sgl. pul.
No. 3 Kempsmith plain, cone pul.
No. 3 LeBlond plain, cone pulley.

No. 3 Cincinnati plain, cone pulley.
No. 2-B heavy B. & S. pl., sgl. pul.
No. 2 Cincinnati plain, cone pulley.
No. 2 LeBlond plain cone pulley.
No. 0 Cincinnati plain, cone pulley.
No. 6 Whitney hand miller.
Becker large hand miller.
No. 22 Garvin vertical, cone pulley.
No. 5 Becker vertical, cone pulley.

SHAPERS AND PLANERS

28" Ohio heavy duty bk. grd. crank.
24" American Tool Works, back geared crank.
20" Columbia hvy. duty bk. grd. crk.
16" Barker b. g. crank.

14" Smith & Mills plain crank.
36"x36"x14" American, two heads.
36"x36"x10" American, one head.
30"x30"x 8" Cincinnati, one head.
30"x30"x 8" Hamilton, one head.

RADIAL AND UPRIGHT DRILLS

5' N.-B.-P. semi-universal, radial
3½" American triple purpose radial, speed box.
3' Bickford plain, speed box.
3' Amer. T. Wks. pl. radial, cone dr.
3' Carlton hi-speed sens. radial.
28" Aurora upright, tapping attach.
26" W. F. & J. Barnes upright, tap. att.
26" Cinti-Bickford upright tap. att.
24" Milwaukee upright.

24" Rockford upright.
23" Rockford upright tapping attach.
22" W. F. & John Barnes upright.
20" Superior upright.
4-spindle Allen hi-speed sensitive.
3-spindle Leland-G. hi-speed sens.
2-spindle H. & W. hi-speed sens.
2-spindle Superior hi-speed sens.
Sipp single spindle hi-speed sens.
3-spindle 26" Barnes gang.

LATHES

36"x22" Putnam, s. q. triple geared.
36"x18" Putnam, s. q. triple geared.
30"x12" LeBlond heavy duty, qk. ch.
30"x16" H., S. & G. heavy duty, q. c.
24"x14" Schumacher-B. stand'd c. g.
22"x12" Rahn & Larmon, qk. chge.
20"x 8' Cisco heavy duty, qk. chge.

18"x 8' Lodge & Shipley, qk. chge.
18"x 8' Cincinnati, quick change.
16"x 8' Hamilton, quick change.
16"x 6' Pratt & Whitney, qk. chge.
14"x 6' Monarch, quick change.
14"x 8' Hamilton tool room, qk. ch., taper, relieving and collet attach.

TURRET LATHES & SCREW MACHINES

3½"x36" Acme flat turret, grd. head.
2½"x26" P. & W. flat turret, grd. hd.
24" Gisholt turret, late type, 6½" hole in spindle.
2" Pratt & Whitney turret, all feeds.

No. 6 Warner & Swasey turret.
12" Pratt & Whitney turret.
No. 4 Bardons & Oliver turret.
No. 1 B. & S. wire fd. screw mch.
No. 1 S. P. Garvin screw mch., new.

GRINDERS

No. 55 Heald cylinder, complete.
No. 60 Heald cylinder, complete.
No. 70 Heald internal, complete.
No. 2 B. & S. surface, mag. chuck.

6"x15" Fitchburg plain.
Nos. 1 & 2 B. & S. univ. cylindrical.
No. 2 Ohio universal tool and cutter.
No. 1 LeBlond univ. tool & cutter.

GEAR CUTTERS AND HOBBERS

No. 4-36" Brown & Sharpe auto.
No. 2-24" Brown & Sharpe auto.
24" Gould & Eberhardt automatic.

No. 12 Brown & Sharpe auto. spur and bevel, cap. up to 12".
18" Gould & Eberhardt gear hobber.

MISCELLANEOUS

Arbor presses, Greenerd Nos. 4 & 5.
Bolt cutter, 1" Acme.
Bolt threader, 1" Landis.
Bolt threader, 2½" Landis, lead screw.
Hammer, 40 lb. Bradley rubber c. h.
Keyseaters, Nos. 1 & 2 Davis.
Keyseater, No. 3 Baker.

Press, power, No. 4 Ferracute.
Punch & shear, sgl. end, Long & A.
Riveting ham's, Nos. 3A & 4A H. S.
Rivet spinner, 5/16" Grant.
Shear, power square, 8" Niagara
No. 196, cap. 18 ga.
Spot welder, Nat. Elec., 2 pcs. 1".

And many others. Send for our complete list of bargains.

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No. 408 East Pearl St., Cincinnati, Ohio

All of the above Machines carried in our Stock in Cincinnati.

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CRANE—	10' & 12' span with 2 & 3 ton hoists, comp. (will quote).
DRILLS—	24" Cincinnati cone drive upright \$ 150.
	14" Sensitive \$30; 15" sensitive 40.
GRINDERS—	14" x 72" Queen City plain cylindrical 1500.
	8" or 10" x 30" Queen City plain cylindrical 1000.
LATHES—	20" x 10" LeBlond, cone and belt shifter 650.
	18" x 8" LeBlond, cone and belt shifter 500.
	14" x 6" LeBlond, cone and belt shifter 275.
	3" x 36" Jones & Lamson bar machine 700.
	3" x 36" Jones & Lamson chucking machine 650.
	2 1/4" x 24" Jones & Lamson chucking machine 550.
MILLERS—	No. 3 S. P. D. LeBlond, plain, & vertical att. 1000.
	No. 2 Cone LeBlond, plain 500.
	10" Universal, dividing head, LeBlond 100.
PLANERS—	32" x 32" x 16" Gray (2 rail heads) 2500.
	30" x 30" x 16" American (2 rail heads) 2000.
	26" x 26" x 12" Whit-Blair (2 rail heads) 1400.
	Numerous small tools and other equipment for manufacturing and jobbing shop.
	Various sizes Queen City back geared Crank Shapers and plain Cylindrical Grinders

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30" x 12" Heavy Duty LeBlond Lathe, qk. change, double back gear.

Price \$1400.

36" x 36" x 14" American Planer.
Price \$850.

No. 3B Brown & Sharpe Milling Machine, single pulley drive.

Price \$750.

No. 3 Cincinnati Milling Machine, single pulley drive.
Price \$850.

36" Fellows Gear Shaper.
Price \$700.

No. 4 LeBlond Milling Machine, Universal, cone dr., double back gear.

Price \$850.

18" x 8" Barker Lathe, loose change gear.

Price \$350.

16" Barker Back Geared Crank Shaper.

Price \$365.

24" Bullard Rapid Production Turret Lathe.

Price \$800.

18" Barker Single Geared Crank Shaper.

Price \$200.

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- 14-20" x 8' LeBlond.
- 5-20" x 12' American.
- 5-20" x 15' American.
- 20-21" x 10' LeBlond.
- 10-24" x 11' Cisco.
- 1-24" x 12' Reed Prentice Grd. Hd.
- 3-24" x 12' Providence.
- 1-24" x 15' Chard.
- 7-25" x 10' LeBlond.
- 10-25" x 12' LeBlond.
- 24-26" x 10' Canada.
- 10-26" x 18' Bridgeford.
- 2-30" x 18' American.
- 15-32" x 12' Pittsburgh.
- 1-36" x 36' Putnam geared head.
- 4-36" x 36' Pittsburgh Geared Hd.
- 3-36" x 37' Niles Bement Pond.
- 1-51" x 20' LeBlond.
- 1-56" x 44" x 18' Johnston.

MILLERS

- 5-No. 2 Kempsmith.
- 1-No. 3 Kempsmith Universal.
- 2-No. 2 Rockford.
- 1-No. 2B Rockford Universal.
- 2-No. 28 Ohio.
- 6-No. 2-B Hvy. Brown & Sharpe.
- 4-No. 3 Kempsmith.
- 9-No. 3-B Hvy. Brown & Sharpe.
- 2-No. 4 Cincinnati.
- 2-No. 4 LeBlond.
- 3-No. 4-B Becker.
- 2-No. 3 Cincinnati Vertical.
- 2-No. 4 Cincinnati Vertical.
- 4-No. 5-C Becker.
- 3-No. 6 Becker.

PLANERS

- 1-24" x 24" x 6' American.
- 2-36" x 36" x 10' Bickett.
- 1-36" x 36" x 12' Woodward & P.
- 3-36" x 36" x 18' Cincinnati.
- 3-42" x 42" x 16' Rockford.
- 1-72" x 56" x 36' Cincinnati.

PRESSES

- 1-No. 34 Toledo Solid Back.
- 1-No. 69 Stoll Geared.

BORING MILLS—Vertical

- 2-24" Bullard "New Era."
- 1-42" Gisholt.
- 1-52" Gisholt.
- 1-60" Pittsburgh.
- 1-62" King.
- 2-72" Cincinnati.
- 7-72" Gisholt.
- 1-84" King.

BORING MILLS—Horizontal

- 1-3" Foote-Burt.
- 1-No. 9 Giddings & Lewis.
- 1-No. 14 Giddings & Lewis.
- 1-No. 3 Rochester Floor Borer.
- 1-5" Detrich & Harvey Floor B.

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- 1-20" Barnes all geared.
- 2-24" Barnes all geared.
- 2-No. D-2 Colburn.
- 1-No. 24 Foote-Burt.
- 1-No. 25 Foote-Burt.
- 5-No. 310 Baker.
- 1-3-spindle Henry & Wright.

RADIAL DRILLS

- 1-5' Niles-Bement-Pond.
- 2-7' Western.

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- 3-6" x 18" Landis.
- 12-10" x 36" Norton.
- 3-10" x 72" Norton.
- 3-12" x 26" Modern.
- 11-14" x 50" Norton.
- 1-18"-30" x 96" Norton Gap.
- 1-20" x 96" Landis.

Our Guarantee: Your money back if you return a machine within thirty days, freight prepaid.

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Powell Co., Wm., Cincinnati

Angle Plates
Germanow-Simon Mch. Co., Rochester, N.Y.

Arbors, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Auto-Gages For Dies
Danly Machine Specialties, Inc., 4918 Lincoln Ave., Chicago

Automatics
National Acme Company, Cleveland, O.
New Britain Machine Co., New Britain, Conn.

Balancing Ways
Anderson Bros. Mfg. Co., Rockford, Ill.
Rowshier Co., N. P., South Bend, Ind.

Balls, Bearing and Burnishing
Abbott Ball Co., Hartford, Conn.

Band Saw Machines, for Metal
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Porter-Cable Machine Co., Syracuse, N.Y.

Barrels, Tumbling
Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., 2012 W. 13th, Chicago

Belt Shifters
Artisan Mfg. Co., Cincinnati, O.
Reinor Manufacturing Co., Mercer, Pa.

Bench Legs, Steel
New Britain Mch. Co., New Britain, Conn.

Bending Machines, Hand and Power
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H. 417E. 31st, N.Y.
Laurie Mfg. Co., Springfield, Ill.
Pedrick Tool & Machine Co., Philadelphia

Bending Rolls
Hendley & Whittemore Co., Beloit, Wis.

Bolt and Nut Machinery
Economy Engineering Co., Willoughby, O.
Foot-Burt Co., Cleveland, O.

Boring Bars
Pedrick Tool & Machine Co., Philadelphia

Boring Bars, Cylinder
Pedrick Tool & Machine Co., Philadelphia

Boring, Drilling & Milling Machines
Landis Tool Co., Waynesboro, Pa.

Boring Machines, Horizontal
Avey Drilling Machine Co., Cincinnati
Pedrick Tool & Machine Co., Philadelphia
Rockford Drilling Machine Co., Rockford, Ill.

Boring Tools
Maxwell Products Co., Cleveland, Ohio.

Burnishing Equipment, Ball
Abbott Ball Co., Elmwood, Conn.

Bushings, Drill Jig
Ex. Cell-O Tool & Mfg. Co., Detroit, Mich.

Case-Hardening Compound
Kasenit Company, 2 & 4 Stone St., New York

Chucking Machines
National Acme Company, Cleveland, O.
New Britain Mch. Co., New Britain, Conn.
Springfield Machine Tool Co., Springfield, O.

Chucks, Collet
Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Bertrand Ave., Chicago

Chucks, Drill
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N.Y.
Jacobs Mfg. Co., Hartford, Conn.
Scully-Jones & Co., 2012 W. 13th, Chicago
Titan Tool Co., Erie, Pa.

Chucks, Drill and Tap
Peter Bros. Mfg. Co., Algonquin, Ill.
Scully-Jones & Co., 2012 W. 13th, Chicago

Chucks, Keyway Cutting
Scully-Jones & Co., Ry. Exch. Bldg., Chicago

Chucks, Magnetic
J. & H. Electric Co., Providence, R.I.

Chucks, Wrenchless
Thomas Elevator Co., 31 S. Hoyne Ave., Chicago

Clamps, Die
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Conway Clutch Co., Cincinnati, O.
Edgemont Machine Co., Dayton, O.

Cold Saws
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Crank Pin Turning Machine
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Cutters, Keyseating
Davis Keyseater Co., Rochester, N.Y.
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Cutters, Milling
Genesee Mfg. Co., Rochester, N.Y.

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Pedrick Tool & Machine Co., Philadelphia

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J. & H. Electric Co., Providence, R.I.

Dial Indicators
Federal Products Corp'n, Providence, R.I.

Die Heads, Threading, Self Opening
National Acme Company, Cleveland, O.

Die Sets
Danly Machine Specialties, Inc., 4918 Lincoln Ave., Chicago

Drill Racks
Peerless Machine Co., Racine, Wis.

Classified Finding Index

Drilling Machine Heads, Multiple
United States Drill Head Co., Cincinnati

Drilling Machines, Bench

Ames Co., B. C., Waltham, Mass.
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Wintershoff Tool & Machine Co., Elkhart, Ind.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Horizontal
Rockford Drilling Machine Co., Rockford, Ill.

Drilling Machines, Multiple Spindle

Avey Drilling Machine Co., Cincinnati
Foote-Burt Co., Cleveland, O.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric
Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chicago
Winterhoff Tool & Machine Co., Elkhart, Ind.
Wisconsin Electric Co., Racine, Wis.

Drilling Machines, Post
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Mueller Machine Tool Co., Cincinnati

Drilling Machines, Radial
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Mueller Machine Tool Co., Cincinnati
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Muohlmatt, Adolph, Cincinnati, O.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.
Wisconsin Electric Co., Racine, Wis.

Drilling Machines, Vertical
Avey Drilling Machine Co., Cincinnati
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Oesterlein Machine Co., Cincinnati, O.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drills, Twist
Cleveland Twist Drill Co., Cleveland, O.

Dust Handling Equipment
Knickersbocker Co., Jackson, Mich.

Emery Wheel Dressers and Cutters
Precision Truing Machine & Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

Filing Machines, Die
Ames Co., B. C., Waltham, Mass.

Filing Room Equipment
Wardwell Mfg. Co., Cleveland, O.

Flexible Shafts
Strand Co., N. A., 5001 N. Lincoln St., Chicago

Forges
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

Gauges, Dial
Ames Co., B. C., Waltham, Mass.
Federal Products Corp'n, Providence, R. I.

Gauges, Piston and Piston Ring
Federal Products Corp'n, Providence, R. I.

Gauges, Thread
Federal Products Corp'n, Providence, R. I.

Gears
Boston Gear Works Sales Company, Norfolk
Downs, Mass.

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Peerless Surfacing Machine Co., Troy, N. Y.

Grinding Machines, Bench
Bedine Electric Co., 2256 W. Ohio St., Chicago
Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Grinding Machines, Caster, Reamer and Tool
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Jarecki Mch., & T. Co., Grand Rapids, Mich.
Lands Tool Co., Waynesboro, Pa.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Oesterlein Machine Co., Cincinnati, O.
Thompson Grinder Co., Springfield, Ohio
Wilmart & Norman Co., Grand Rapids, Mich.

Grinding Machines, Cylindrical
Jarecki Mch., & T. Co., Grand Rapids, Mich.
Lands Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Jarecki Mch., & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio
Wilmart & Norman Co., Grand Rapids, Mich.

Grinding Machines, Disc
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Porter Cable Machine Co., Syracuse, N. Y.

Grinding Machines, Drill
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
La Salle Tool Co., La Salle, Ill.
Wilmart & Norman Co., Grand Rapids, Mich.

Grinding Machines, Face
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Internal
Lands Tool Co., Waynesboro, Pa.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
Wilmart & Norman Co., Grand Rapids, Mich.

Grinding Machines, Portable Electric
Bedine Electric Co., 2256 W. Ohio St., Chicago
Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.
Service Tool, Die & Mfg. Co., 2256 Walnut
Street, Chicago.
Stow Flexible Shaft Co., Philadelphia, Pa.
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Classified Finding Index

Grinding Machines, Snagging
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Surface
Gallmeyer & Livingston Co., Grand Rapids, Mich.

La Salle Tool Co., La Salle, Ill.

Thompson Grinder Co., Springfield, Ohio

Wilmath & Morman Co., Grand Rapids, Mich.

Grinding Machines, Tap
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Tool
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Universal
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Landis Tool Co., Waynesboro, Pa.

Thompson Grinder Co., Springfield, Ohio

Wilmath & Morman Co., Grand Rapids, Mich.

Hack Saw Blades
Peerless Machine Co., Racine, Wis.

Hack Saw Machines
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago

Peerless Machine Co., Racine, Wis.

Racine Tool & Machine Co., Racine, Wis.

Hammers, Air
Independent Pneumatic Tool Co., 800 W. Jackson Blvd., Chicago

Hammers, Riveting
Independent Pneumatic Tool Co., 800 W. Jackson Blvd., Chicago

Hoists
Ford Chain Block Co., Philadelphia, Pa.

Thomas Elevator Co., 31 S. Hoyne Ave., Chicago

Hoists, Portable
Canton Foundry & Machine Co., Canton, Ohio

Keyseating Machines
Burr & Son, John T., Brooklyn, N. Y.

Chattanooga Mfg. Co., Chattanooga, Tenn.

Davis Keyseater Co., Rochester, N. Y.

National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments
Cisco Machine Tool Co., Cincinnati, O.

Maxwell Products Co., Cleveland, O.

Sidney Machine Tool Co., Sidney, O.

Lathe Turrets
Maxwell Products Co., Cleveland, Ohio

Lathe, Automatic Turret
National Acme Company, Cleveland, O.

Lathe, Bench
Ames Co., B. C., Waltham, Mass.

Hardinge Brothers, Inc., 1770 Bertrand Ave., Chicago

Monarch Machine Tool Co., Sidney, O.

Lathe, Engine
Boye & Emmes Mch. Tool Co., Cincinnati, O.

Carroll Mch. Tool Co., A. V., Cincinnati, O.

Cincinnati Lathe & Tool Co., Cincinnati, O.

Cisco Machine Tool Co., Cincinnati, O.

Hardinge Brothers, Inc., 1770 Bertrand Ave., Chicago

LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Monarch Machine Tool Co., Sidney, O.

Mueler Machine Tool Co., Cincinnati, O.

Porter-Cable Machine Co., Syracuse, N. Y.

Sebastian Lathe Co., Cincinnati, O.

Sidney Machine Tool Co., Sidney, O.

Springfield Machine Tool Co., Springfield, O.

Lathe, Extension Bed Gap
Rahn-Larmon Co., Cincinnati, O.

Lathes, Fox Monitor
Harker Co., Wm., Covington, Ky.

Lathes, Gap
Carroll Mch. Tool Co., A. V., Cincinnati, O.

Lathes, Short Bed
Artisan Mfg. Co., Cincinnati, O.

Monarch Machine Tool Co., Sidney, O.

Porter-Cable Machine Co., Syracuse, N. Y.

Sidney Machine Tool Co., Sidney, O.

Lathes, Turret
Monarch Machine Tool Co., Sidney, O.

Mandrels, Expanding
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Western Tool & Mfg. Co., Springfield, O.

Mandrels, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Milling Attachments
Burke Machine Tool Co., Conneaut, Ohio

LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Oesterlein Machine Co., Cincinnati, O.

Porter-Cable Machine Co., Syracuse, N. Y.

Taylor & Fenn Co., Hartford, Conn.

Milling Machine Spacing Washers
Maxwell Products Co., Cleveland, Ohio

Milling Machines, Bench
Ames Co., B. C., Waltham, Mass.

Burke Machine Tool Co., Conneaut, Ohio

Milling Machines, Hand
Burke Machine Tool Co., Conneaut, Ohio

U. S. Machine Tool Co., Cincinnati, O.

Milling Machines, Horizontal
Oesterlein Machine Co., Cincinnati, O.

Milling Machines, Plain
Burke Machine Tool Co., Conneaut, Ohio

Gallmeyer & Livingston Co., Grand Rapids, Mich.

LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Milling Machines, Portable
Frederick Tool & Machine Co., Philadelphia

Milling Machines, Spline
Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Milling Machines, Vertical
Burke Machine Tool Co., Conneaut, Ohio

LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Taylor & Fenn Co., Hartford, Conn.

Mills, Adjustable Hollow
Genesee Mfg. Co., Rochester, N. Y.

Motors, Electric
Reliance Electric & Eng. Co., Cleveland

Wisconsin Electric Co., Racine, Wis.

Nuts, Plain or Castellated
National Acme Company, Cleveland, O.

Oil Cups
Gitt Bros. Mfg. Co., 1840 S. Kilbourn Av., Chicago

Oil Extractors
Barrett Co., Leon J., Worcester, Mass.

Tolhurst Machine Works, Troy, N. Y.

Pattern Shop Machinery
Towsley Mfg. Co., John T., Cincinnati

Pins, Leader And Dowel
Danly Machine Specialties, Inc., 4918 Lincoln Ave., Chicago

Classified Finding Index

Pipe Bending Machines
Pedrick Tool & Machine Co., Philadelphia

Pipe Cutting and Threading Machines
Chicago Pipe Thread Co., Racine, Wis.

Piston Machines
National Acme Company, Cleveland, O.

Piston Ring Machines
National Acme Company, Cleveland, O.

Planers, Open-side
Cleveland Planer Co., Cleveland, O.

Planers, Valve Seat, Portable
Pedrick Tool & Machine Co., Philadelphia

Polishing and Buffing Machines
Cisco Machine Tool Co., Cincinnati, O.
Independent Pneumatic Tool Co., 800 W. Jackson Blvd., Chicago
New Britain Machine Co., New Britain, Conn.
Wilmart & Norman Co., Grand Rapids, Mich.
Wisconsin Electric Co., Racine, Wis. (Mich.)

Presses, Arbor
Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., Springfield, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Presses, Broaching
Lourie Mfg. Co., Springfield, Ill.

Presses, Foot
Rockford Iron Works, Rockford, Ill.
Taylor & Penn Co., Hartford, Conn.

Presses, Power
Hendley & Whittemore Co., Beloit, Wis.
Lourie Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.

Presses, Punch
LaSalle Machine Works, 2013 S. LaSalle St., Chicago
Lewthwaite Mfg. Co., T. H., 417 E. 31st St., N.Y.
Lourie Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.

Presses, Screw
Jareck Mfg. & T. Co., Grand Rapids, Mich.
Lourie Mfg. Co., Springfield, Ill.
Towsley Mfg. Co., John T., Cincinnati

Pulley Machinery
Avey Drilling Machine Co., Cincinnati

Pulleys, Iron, Solid and Split
Conway Clutch Co., Cincinnati, O.

Pumps, Lubricant
Ruthman Machinery Co., Cincinnati, O.

Punch Press Feeds
Rockford Iron Works, Rockford, Ill.

Punch, Shear and Bender, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mfg. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power
Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mfg. Co., T. H., 417 E. 31st St., N.Y.
Rockford Iron Works, Rockford, Ill.

Racks, Bar Stock
New Britain Machine Co., New Britain, Conn.

Reamers
Cleveland Twist Drill Co., Cleveland, O.

Reamer Holders
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Reels, Extension
Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machines
Grant Mfg. & Mch. Co., Bridgeport, Conn.

Rod Cutters
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mfg. Co., T. H., 417 E. 31st, N.Y.

Saw Sharpening Machines
Wardwell Mfg. Co., Cleveland, O.

Scraping Machines, Hand & Pneumatic
Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Driving Machines, Automatic
Reynolds Machine Co., Massillon, Ohio

Screw Machine Products
National Acme Company, Cleveland, O.

Screw Machines, Automatic
National Acme Company, Cleveland, O.
New Britain Mch. Co., New Britain, Conn.

Screws
Economy Screw Corporation, 5218 Harrison Ave., Chicago
National Acme Company, Cleveland, O.

Second-Hand Machinery
Baker, J. C., Columbus, O.
Barker & Co., Wm., Covington, Ky.
Bath & Co., Cyril J., Cleveland, O.
Bennett Mch. Co., 50 Church St., New York
Hotwinik Brothers, New Haven, Conn.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Cincinnati Automatic Mch. Co., Cincinnati
Cincinnati Lathe & Tool Co., Cincinnati, O.
Cincinnati Machinery & Supply Co., Cincinnati, O.
Clark Machinery Co., Cleveland, O.
Clinton Mch. Co., 128 S. Clinton, Chicago
Co-Operative Machinery Co., Cleveland, O.
Donahue Steel Products Co., 204 N. Jefferson St., Chicago
Eastern Machinery Co., Cincinnati, O.
Empire Machinery Exchange Company, Inc., Cleveland, Ohio
Easley Machinery Co., E. L., 555 Washington Blvd., Chicago
Fitzsimmons-Cole Mch. Co., Pittsburgh, Pa.
Foster Machinery Co., Cleveland, O.
Hartson & Co., J. E., Inc., 80 Church St., New York
Harris Bros. Co., 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago
Hill, Clarke & Co., Inc., Boston, Mass.
Hymen & Sons, Joseph, Philadelphia
Industrial Plants Corporation, 25 Church St., New York
Johnson & Sons Machinery Co., Wm. G., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, O.
Kinsey Co., W. A., Cincinnati, O.
Lucas & Son, J. L., Inc., Bridgeport, Conn.
Little Co., W. P., Cleveland
McCabe Lathes & Machinery Corp., J. J., 149 Broadway, New York
McCoy Brandt Mch. Co., Pittsburgh, Pa.
McDonald Machinery Co., St. Louis
McMullen Mch. Co., Grand Rapids, Mich.
Marr-Galbreath Mch. Co., Pittsburgh, Pa.
Marshall & Huschart Machinery Co., 17 S. Jefferson St., Chicago

Classified Finding Index

Second-Hand Machinery—Continued
Mid-West Machine Tool & Supply Co.,
Davenport, Iowa.

Molitor Machy. Co., Chas., 118 S. Clinton St.,
Chicago.

Morse and Co., Inc., 498 Broome St., N. Y.

Morris Machine Tool Co., Cincinnati, O.

Match & Merryweather Machinery Company,

Cleveland, O.

Miles-Bement-Pond Co., 111 Broadway, N. Y.

Norton-Broadway Machy. Co., Cincinnati, O.

O'Brien Machinery Co., Philadelphia.

Oliver Chilled Plow Works, South Bend, Ind.

Osborne & Sexton Machy. Co., Columbus, O.

Oviatt & Co., D. C., Cleveland, O.

Penfield Axle Co., Peru, Ind.

Peninsular Machinery Co., Detroit, Mich.

Queen City Machine Tool Co., Cincinnati, O.

Reeve-Fritts Co., 27 S. Deplaines, Chicago.

Reliance Machy. Sales Co., Pittsburgh, Pa.

Rosenfeld Machinery Co., 942 W. Lake St.,

Chicago.

Russell Machine Co., Pittsburgh, Pa.

Saltzman, B. L., 824 W. Van Buren Street,

Chicago.

Scott-Bansbach Machy. Co., 130 S. Clinton,

Chicago.

Simmons Machine Tool Corp., Albany, N. Y.

Smith Machinery Co., H. A., Syracuse, N. Y.

Star Foundry Co., Albert Lea, Minn.

Stocker-Kemny-Wack Co., 117 N. Jefferson

St., Chicago.

Stoehr Machy. Co., A. M., 844 N. Wells St.,

Chicago.

Strater, A. F., 20 Church St., New York.

Strong, Carlisle & Hammond Co., Cleveland.

Syracuse Supply Co., Syracuse, N. Y.

Tulor, Vellek & Co., Inc., Lake & Deplaines

St., Chicago.

Washburn Co., 612 S. LaSalle, Chicago.

Wertman, M. A., Cleveland, O.

White Machy. Co., A. D., 168 N. Jefferson

St., Chicago.

Whitman & Barnes Mfg. Co., Akron, O.

Will-Hurt Co., Orville, Ohio.

Winterer, Herman L., Philadelphia.

Shafts, Flexible

Stow Flexible Shaft Co., Philadelphia, Pa.

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

Osborne & Sexton Machy. Co., Columbus, O.

Rhodes Mfg. Co., Hartford, Conn.

Smith & Mels Co., Cincinnati.

Springfield Machine Tool Co., Springfield, O.

Shears, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco

Av., Chicago.

Hendley & Whittemore Co., Beloit, Wis.

Lewthwaite Machine Co., T. H., 617 E. 31st

St., New York.

Whitney Metal Tool Co., Rockford, Ill.

Shears, Power

Hendley & Whittemore Co., Beloit, Wis.

Slotting Machines

Rhodes Mfg. Co., Hartford, Conn.

Spacing Washers

Detroit Stamping Co., Detroit, Mich.

Spindles, Grinding

Ex-Coll-O Tool & Mfg. Co., Detroit, Mich.

Spindles, Air Driven, High Speed

Ex-Coll-O Tool & Mfg. Co., Detroit, Mich.

Stools and Chairs, Factory

Chicago Wire Chair Co., 619 N. LaSalle St.,

Chicago.

Straightening Machines

Springfield Machine Tool Co., Springfield, O.

Towsley Mfg. Co., John T., Cincinnati.

Whitney Metal Tool Co., Rockford, Ill.

Tap Extractors

Walton Co., Hartford, Conn.

Tapping Machines and Attachments

Alto Mfg. Co., 1647 Wolfram St., Chicago.

Avey Drilling Machine Co., Cincinnati.

Burke Machine Tool Co., Cincosut, Ohio.

Eastern Tube & Tool Co., Inc., 580 Johnson

Av., Brooklyn, N. Y.

Leland-Gifford Co., Worcester, Mass.

Whitney Metal Tool Co., Rockford, Ill.

Taps, Threading, Collapsing

National Acme Company, Cleveland, O.

Thread Milling Attachments

Cisco Machine Tool Co., Cincinnati, O.

Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco

Av., Chicago.

Hart Mfg. Co., Cleveland, O.

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco

Av., Chicago.

Western Tool & Mfg. Co., Springfield, O.

Tool Racks

Chicago Wire Chair Co., 619 N. LaSalle St.,

Chicago.

Tools, Boring

Armstrong Bros. Tool Co., 308 N. Francisco

Av., Chicago.

Tools, Lathe and Planer

Armstrong Bros. Tool Co., 308 N. Francisco

Av., Chicago.

Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco

Av., Chicago.

Tools, Spot Facing

Genesee Mfg. Co., Rochester, N. Y.

Travellers, I-Beam

Ford Chain Block Co., Philadelphia, Pa.

Trucks, Machine Shop

New Britain Machine Co., New Britain, Conn.

Towsley Mfg. Co., John T., Cincinnati.

Turntables

Canton Foundry & Machine Co., Canton, O.

Universal Joints

American Tool Works, Inc., Hartford, Conn.

Borgeson Mfg. Co., Inc., Torrington, Conn.

Boston Gear Works Sales Company, Norfolk

Downs, Mass.

Valve Grinders

Independent Pneumatic Tool Co., 600 W.

Jackson Blvd., Chicago.

Valves

Powell Co., Wm., Cincinnati.

Vises, Drilling Machine

Armstrong-Blum Mfg. Co., 341 N. Francisco

Av., Chicago.

Armstrong Bros. Tool Co., 308 N. Francisco

Av., Chicago.

Germanow-Simon Mach. Co., Rochester, N. Y.

Thomas Elevator Co., 31 S. Wayne Ave.,

Chicago.

Vises, Machinists'

New Britain Machine Co., New Britain, Conn.

Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine

Germanow-Simon Mach. Co., Rochester, N. Y.

Wood Working Machinery

Hendley & Whittemore Co., Beloit, Wis.

New Britain Machine Co., New Britain, Conn.

Porter-Cable Machine Co., Syracuse, N. Y.

Towsley Mfg. Co., John T., Cincinnati.

128

Index of Advertisers

A	
Abbott Ball Co.	56
Alto Manufacturing Co.	49
American Hollow Boring Co.	77
American Tool Works, Inc.	76
Ames Co., B. C.	69
Anderson Bros. Mfg. Co.	54
Armstrong-Blum Mfg. Co.	29
Armstrong Bros. Tool Co.	26
Artisan Manufacturing Co.	19
Atlas Press Co.	28
Avey Drilling Machine Co.	17
B	
Barbour, Love & Woodward	108
Barker & Co., Wm.	120
Barrett Co., Leon J.	38
Bath & Co., Cyril J.	80-81
Bennett Machinery Co.	100
Bodine Electric Co.	58
Borgeson Manufacturing Co.	76
Boston Gear Works, Inc.	100
Boston Gear Works Sales Co.	100
Botwinik Brothers	54
Bowasher Co., N. P.	6
Boye & Emmes Mch. Tool Co.	88
Brown Machinery Co.	99
Brownell Machinery Co.	50
Burke Machine Tool Co.	72
Burr & Son, John T.	
C	
Canedy-Otto Mfg. Co.	15
Canton Foundry & Mch. Co.	64
Carroll Machine Tool Co., A. V.	24
Chattanooga Machinery Co.	75
Chicago Pipethread Machine Co.	40
Chicago Wire Chair Co.	26
Cincinnati Automatic Mch. Co.	101
Cincinnati Bickford Tool Co.	101
Cincinnati Lathe & Tool Co.	18
Cincinnati Mch. & Supply Co.	98
Cincinnati Specialty Mfg. Co.	74
Cisco Machine Tool Co.	68
Clark Machinery Co.	97
Cleveland Planer Co.	20
Cleveland Twist Drill Co.	3
Clinton Machinery Co.	79
Conway Clutch Co.	78
Co-Operative Machinery Co.	110
D	
Danly Machine Specialties, Inc.	33
Davis Keyseater Co.	73
DePrez, Harry W.	79
Detroit Stamping Co.	70
Donahue Steel Products Co.	114
E	
Eastern Machinery Co.	119
Eastern Tube & Tool Co., Inc.	48
F	
Economy Engineering Co.	7
Economy Screw Corporation	52
Edgemont Machine Co.	62
Empire Mch. Exchange Co.	106
Easley Machinery Co., E. L.	108
Ex-Cell-O Tool & Mfg. Co.	125
G	
Federal Products Corporation	62
Fitzsimmons & Cole Mch. Co.	88
Foote-Burt Co.	12
Ford Chain Block Co.	65
Foster Machinery Co.	99
H	
Haetten & Co., J. E., Inc.	94
Hardinge Brothers, Inc.	24
Harris Bros. Co.	111
Hart Manufacturing Co.	77
Hendley & Whitemore Co.	31
Hill, Clarke & Co., Boston	81
Hill, Clarke & Co., of Chicago	121
Hoosier Universal Machine Co.	92
Hyman & Sons, Joseph	112
I	
Independent Pneumatic Tool Co.	47
Industrial Plants Corporation	122
J	
J. & H. Electric Co., Inc.	60
Jacobs Manufacturing Co.	66-67
Jarecki Machine & Tool Co.	37
Johnson & Sons Mch. Co., Wm. C.	82
Jones Machine Tool Co.	94
K	
Kasenit Company	46
Kelly, E. A.	79
Kent Machine Co.	66-67
Kinsey Co., E. A.	118
Klauber, Edward L.	101
Knickerbocker Co.	23
L	
Landis Tool Co.	11
LaSalle Machine Works	32
LaSalle Tool Co.	13
LeBlond Mch. Tool Co., R. K.	5

Index of Advertisers—Continued

Leland-Gifford Co.	16	Reliance Machinery Sales Co.	93
Lewthwaite Machine Co., T. H.	34	Reynolds Machine Company	27
Little Co., W. P.	82	Reznor Manufacturing Co.	41-79
Little Giant Company	95	Rhodes Manufacturing Co.	21
Lourie Hydraulic Co.	28	Rockford Drilling Machine Co.	14
Lucas & Son, J. L., Inc.	79	Rockford Iron Works	32
M			
McCabe Lathe & Machinery Corporation, J. J.	109	Rosenfeld Machinery Co.	90
McCoy-Brandt Machinery Co.	86	Russell Machine Co.	117
McDonald Machinery Company	84	Ruthman Machinery Co.	40
McMullen Machinery Co.	98		
Marr-Galbreath Machinery Co.	85		
Marshall & Huschart Mch. Co.	115		
Maxwell Products Co.	39		
Menge, Wm.	100		
Mid-West Machine Tool & Supply Co.	116		
Molitor Machinery Co., Chas.	87		
Monarch Machine Tool Co.	18		
Morey and Co., Inc.	105		
Motch & Merryweather Mch. Co.	104		
Muehlmann, Adolph	45		
Mueller Machine Tool Co.	112		
N			
National Acme Company	9		
National Machine Tool Co.	72		
New Britain Machine Co.	132		
Nicholson & Co., W. H.	53		
Niles-Bement-Pond Co.	83		
Norton-Broadway Mch. Co.	114		
O			
O'Brien Machinery Co.	92		
Oesterlein Machine Co.	8		
Oliver Chilled Plow Works	110		
Osborne & Sexton Mch. Co.	102		
Oviatt & Co., D. C.	86		
P			
Pedrick Tool & Machine Co.	25		
Peerless Machine Co.	34		
Peerless Surfacing Mch. Co., Inc.	61		
Penfield Axle Co.	113		
Peninsular Machinery Co.	96		
Peter Bros. Mfg. Co.	30-49		
Porter-Cable Machine Co.	60		
Powell Co., The Wm.	52		
Precision Truing Machine & Tool Company	59		
Q			
Queen City Machine Tool Co.	120		
R			
Racine Tool & Machine Co.	30		
Rahn-Larmon Co.	4		
Reeve-Fritts Company	86		
Reliance Elect. & Engineering Co.	2		
S			
Saltzman, B. L.	92		
Scott-Bansbach Machinery Co.	100		
Scully-Jones & Co.	70		
Sebastian Lathe Co.	20		
Second-Hand Machinery	79 to	122	
Service Tool, Die & Mfg. Co.	63		
Sidney Machine Tool Co.	22		
Sigourney Tool Co.	44		
Simmons Machine Tool Corp.	103		
Smith Machinery Co., H. A.	84		
Smith & Mills Co.	22		
Springfield Machine Tool Co.	36		
Star Foundry Co.	100		
Stocker-Rumely-Wachs Co.	118		
Stoehr Machinery Co., A. M.	98		
Stow Flexible Shaft Co.	56		
Strater, A. F.	91		
Strand & Co., N. A.	68		
Strong, Carlisle & Hammond Co.	90		
Surplus Material & Mch. Co.	91		
Syracuse Supply Company	96		
T			
Taylor & Fenn Co.	35		
Thomas Elevator Co.			
Thompson Grinder Co.	58		
Titan Tool Co.	43		
Tolhurst Machine Works	38		
Towsley Mfg. Co., John T.	64		
Tubor, Velick & Co., Inc.	97		
U			
United States Drill Head Co.	45		
United States Machine Tool Co.	44		
W			
Walton Co.	46		
Wardwell Manufacturing Co.	55		
Washburn Co., The	84		
Wertman, M. A.	90		
Western Tool & Mfg. Co.	51		
White Machinery Co., A. D.	107		
Whitman & Barnes Mfg. Co.	89		
Whitney Metal Tool Co.	36		
Will-Burt Company	116		
Wills, Mrs. Jocie	93		
Wilmarth & Morris Co.	131		
Winterer, Herman L.	95		
Winterhoff Tool & Machine Co.	43		
Wisconsin Electric Co.	57		

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